

**GOVERNANCE FACTORS INFLUENCING IMPLEMENTATION OF
DISASTER RISK REDUCTION GUIDELINES IN MERU SOUTH
DISTRICT, KENYA**

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**A Research Project Submitted in Partial Fulfillment of the Requirements for
the Degree of Master of Education in Corporate Governance in Education**

University of Nairobi

2014

DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

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DEDICATION

This research is dedicated to my mother, my husband and children as well as my late father for their selfless contribution towards my education.

ACKNOWLEDGEMENTS

Firstly, I thank God for giving me a chance to undertake my studies. The opportunity is an investment in my academic world and I appreciate every effort the University made so that I complete the programme. This research project would not have been possible without the guidance and the help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this project. Secondly, I owe my deepest gratitude to my supervisors Mr. Edward Kanori and Dr. Jeremiah Kalai whose encouragement, guidance and support from the initial to the final level enabled me to complete this project in time. I wish also to appreciate all the lecturers for their guidance and unwavering support throughout the whole period.

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ABBREVIATIONS AND ACRONYMS

BOM	Board of Management
CFS	Child Friendly Schools
CRC	Convention on the Rights of the Child
DRR	Disaster Risk Reduction
FDSE	Free Day Secondary Education
MOEST	Ministry of Education ,Science and Technology
NEMA	National Environment Management Authority
NWHO	National World Hope Organization
QASO	Quality Assurance and Standards Officer
RMOE	Rwanda Ministry of Education
SPSS	Statistical Package for Social Science
USA	United States of America
UNICEF	United Nations Children Education Fund
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction

ABSTRACT

The purpose of the study was to investigate factors influencing the implementation of Disaster Risk Reduction guidelines in public secondary schools in Meru South District, Kenya. The study sought to establish the extent to which involvement of stakeholders in decision making, sensitization of the community, availability of financial resources and monitoring of schools by government agencies influenced the implementation of Disaster Risk Reduction Guidelines in Meru South District. The study adopted a descriptive survey research design. The study targeted 20 public boarding secondary schools, and 20 boarding masters in those schools. Findings revealed that principals involved the stakeholders in decision making through parents meetings, students council meetings and class meetings. It was also revealed that majority 18 (94.7%) of housemasters indicated that the teachers assessed the premises daily and that the students' leaders routinely monitored the premises. The study further revealed that the schools put in place structures necessary for the implementation of disaster risk reduction. Findings further revealed that majority 17 (98.5%) of principals indicated that they did not have occupation certificate for occupied buildings but they had grills removed from windows. Majority 13 (68.4%) of principals lacked disaster management training for staff. Based on the study findings, the study concluded principals involved the stakeholders in decision making through parents meeting, students council meetings and class meetings. The study lastly concluded that the schools had inspection of the school by Directorate of Quality Assurance and Standards Officers (DQASOs) but the principals lacked disaster management training for staff and fire brigade personnel talks and demonstrations. Based on the findings and conclusion made above, the study makes the following recommendations: that the school management should initiate sensitization by way of creating awareness through parents meetings, students meetings, assemblies, and rules and regulations; stakeholders to be sensitized on disaster preparedness which either combats the disaster or minimizes its effects. The school management should solicit for funds and budget for the same in construction of safe infrastructure and purchase of equipment necessary in disaster management.

CHAPTER ONE

INTRODUCTION

Background to the study

The UN Convention on Rights of the Child (1990) recognizes that a child has both the right to life and education. Further the CRC advocates for protection of children from all forms of violence, injury, abuse and neglect. The world education forum Dakar frame work for action, Education for All (EFA), UNESCO (2000) acknowledged that natural hazards pose significant challenges to countries in meeting those EFA goals and would require international level support.

Rector's (2004) reported the India School fire where 90 children died, as result of partial or total lack of implementation of School safety policies, the building was overcrowded and had only one exit while Elliot, Handburg and Williams (1998) reported that approximately 282,000 learners and 5,200 educators were physically assaulted in American Secondary Schools every month. In Malawi, the quality and adequacy of school infrastructure in terms of classrooms and access to water, sanitation services have always been a challenge hence contributing to low enrolment and high dropout rates particularly for girls (ESAR, 2006).

All over the world, there has been an upward trend in the number of students dying and getting injured in school violence, disaster and emergencies that would be avoided if DRR guidelines were strictly adhered to. This has raised a lot of concern in many countries where attempts have been made to address the menace. The impact of disaster in the developed world has been tremendously reduced due to availability of preparedness measures (United States Fire Administration, National Fire Data Centre, 2007).

Disaster risk reduction (DRR) is a systematic approach to identifying, assessing and reducing the risks of disaster with the aim of reducing socio economic vulnerabilities to disaster as well as dealing with environmental and other hazards that trigger them (Republic of Kenya, 2008). According to Kenya Safety Standards and Guidelines Manual (2008), disasters can be natural or manmade. Natural disasters include drought, mudslide, floods, tropical cyclone, earthquakes, and fires.

Manmade disasters include violent events, wars, terrorism, riots, and massacres. Disaster risk reduction is the countermeasure for both natural and Manmade disasters. These include;-humanitarian aid, emergency population warning, emergency alert system, earthquake warning system, evacuations, emergency management, hurricane preparedness and crisis management.

Disaster Risk Reduction (DRR) initiative in Bangladesh passed the Disaster Management Act in 2012. The initiatives include news articles and advocacy papers, highlighting the importance of community level consultation during the legislative process. Disasters in Haiti and Pakistan in 2010 showed the need to use knowledge, innovation, and education to build a culture of safety and resilience at all levels as articulated in the Kyoto Framework for Action 2005-2015. DRR is aimed at promoting safe behavior of school children and teachers in case of major disaster.

The Center for Disaster Preparedness (2008), stresses that in the Philippines schools are a fundamental institution that are very much embedded in communities and thus, it is important to develop schools to become centers for disaster risk reduction for both the school and its community. Similarly, Dufty (2009) stresses the importance of viewing school natural hazards education as one possible component of a local community education package and of integrating it into a broader context of a learning process or activity that builds community resilience to natural hazards. Such a community education package would target a range of vulnerable groups and organizations such as the elderly, people of non-native speaking background, those living in especially high risk areas, and businesses. According to Dufty (2009) successful school programmes have integrated student learning with community risk preparedness programmes through learning extensions at home and the encouragement of child-parent and teacher-parent communication.

The Children's Act (Chapter 586 – 2001) in the laws of Kenya 2010 lays emphasis on protection of all children. According to Marla (2008) the promise of education will only be fulfilled if every new school built is a safe school. All this is achieved in a safe school. Education is the basis upon which development of a nation is pegged. There are several factors that contribute to success of education and these include provision of safe learning environment. For this reason, policy makers from various parts of the world have formulated various declarations and agreements that seek to ensure school safety (Nganga, 2013)

Institutional factors that pose threats to students include poorly constructed classrooms, dormitories, and play grounds, inadequate and inappropriate furniture. According to Musimba (2005) Kenyan schools frequently experienced issues of safety, commissions of inquiry would be formed, the Nation would mourn for a while and forget leaving the potential hazards intact and hence exposing the school to disaster.

To create a culture of safety, DRR has to be integrated within all levels of formal education, from the pre-primary to the advanced university levels, and particular attention has to be paid to curricula and school integration, teacher training, and the assessment of learning. Disaster risk education needs also to be integrated into non-formal education, which can take many forms such as

community campaigns and emergency drills. Non-formal education activities can be the rapid entry point for DRR Education. Within recent years indigenous and traditional knowledge and the realization of its potential to improve DRR policies have been emphasized, especially through the linkage with disaster education and early warning systems.

The Arkansas Department of Education is charged with the responsibility of overseeing the design and construction of school facilities. Countries such as Bangladesh, China, Cambodia, Philippines and India, have integrated disaster risk reduction (DRR) into school curriculum. In Sri Lanka disaster risk reduction is by integrating subject of geography in secondary schools. In India it is a separate subject in grade eight, nine and ten. In Philippines, China and Cambodia, it was mainstreamed into second grade subjects of national curriculum modules (UNDP, 2010).

Framework for action, Education for All (EFA), and UNESCO (2000) acknowledged that natural hazards pose significant challenges to countries in meeting those EFA goals. Rector's (2004) reported the India school fire where 90 children died as result of partial or total lack of implementation of DRR policies, where the building was overcrowded and had only one exit. There is now international acknowledgement that efforts to reduce disaster risks must be systematically integrated into policies, plans and programs.

Disaster risk management involves the systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks in order to avoid or limit the adverse impacts of hazards on lives (Republic of Uganda, 2010). In 2008, the Kenya government in collaboration with church world service developed safety standards manual for schools in Kenya as a way of making schools safe zones for schools. The Disaster risk reduction guidelines are clearly stipulated in the manual where school safety standard No.12 states that the school management should create mechanisms and procedures that ensure stakeholders are conversant with measures needed to prevent occurrence of disasters and steps required to reduce the impact.

Guidelines are given on flood safety, fire safety, landslide safety, thunderstorm and lightening safety, earthquake safety, safety during strong winds and fire safety (republic of Kenya 2008). Ndiangui (2010) indicated that schools lack disaster preparedness plans such as drills, kits, trainings and equipment such as fire extinguishers. According to Otula (2007) it is possible to avoid or minimize effects of disaster, if appropriate systems and infrastructure were put in place. According to regulations by the Ministry of Public Works, all buildings should adhere to suitable site plans as per the regulations.

According to Aucott (1998), the Royal Society for Prevention of Accidents is a project that produces training resources for schools. It encourages schools to develop a culture that promote safety. According to the Republic of Kenya

Safety Standards and Guidelines (2008), the school management should create mechanisms and procedures that ensure stakeholders are conversant with the measures needed to prevent occurrence of disaster and steps required to reduce the impact (UNESCO, 2009).

The Directorate of Quality Assurance and Standards in the Ministry of Education (DQAS) should ensure the schools comply with the regulations through assessment and monitoring. In the Constitution of Kenya (2010), article 69 enjoins the state to eliminate processes and activities that are likely to endanger the environment. Nthenya (2013), in the situational analysis of school safety and school administration participation in public secondary schools in Kenya established that only 20 percent of the schools studied had a subcommittee for safety and none of them had the head teacher or deputy as secretaries as required by the manual.

The frequent school fires mean that the guidelines have not been successfully implemented. Nduku (2013) in the study of flood disaster preparedness in public secondary schools in Bunyala prone to floods established that no flood drills were done due to lack of resources, poor planning and recommended for sensitization on disaster management. This concurs with the recommendations of Oligi (2013) study of control of floods in Nyatike. According to a report by UNICEF CFS, more than 50 per cent of children who die in earth quakes each year die inside the school buildings. In Pakistan, more than 17000 children perished when their school building collapsed in 2005. The report

recommended that school authorities predict, prevent and prepare for possible disaster (UNICEF-2005). According to Nyakundi (2012) there is need for school management to learn more about disaster prevention and management in order to reduce or avoid disaster. It is on the basis of the common occurrence of disaster in schools that this study intends to find out the governance factors influencing the implementation the DRR guidelines in public secondary schools in Meru South District.

1.1 Statement of the problem

A report by the New World Hope (2013) indicated that an earth quake in Pakistan killed 18095 students and 853 teachers in 2005. The organization recommended education of the community on risk reduction. Kyema (2013) established that over the last century the frequency, severity and impact of natural disaster has increased substantially. This has made Disaster Risk Reduction (DRR) in secondary schools in Kenya a growing concern.

The frequent disasters in schools have resulted to loss of property and lives. It is therefore clear that the DRR guidelines have not been fully implemented in Kenya. This has resulted to occurrence of disaster causing loss of life and property over the years. In 1999, four prefects in Nyeri High School were burnt to death, while in Bombolulu Girls, the fire tragedy of 1998 left 25 girls dead (Njuguna, 2001). The Kyanguli Secondary School in Machakos fire tragedy left 68 dead and scores injured (Adalo 2001), while in 2010, two boys burnt to death at Endarasa Secondary School in Nyeri after the dormitory they

were sleeping in was torched, the dormitory had grills fitted on the windows against the safety guidelines on disaster risk reduction.

The Safety Standards and Guidelines Manual (Republic of Kenya 2008) aimed at addressing DRR among other school safety issues. The fact that teachers and learners safety has frequently been compromised by situations of risk and jeopardy where property and lives have been lost shows that the DRR guidelines have not been fully implemented.

1.3 Purpose the study

The purpose of this study was to investigate factors influencing the implementation of Disaster Risk Reduction (DRR) guidelines in public secondary schools in Meru South District, Kenya.

1.4 Objectives of the study

The study was based on the following objectives:

- i. To establish the extent to which involvement of stakeholders in decision making influences the implementation of Disaster Risk Reduction Guidelines in Public Secondary Schools in Meru South District.
- ii. To examine the extent to which sensitization of the community influences the implementation of DRR guidelines in public secondary schools in Meru South District.

- iii. To establish the extent to which availability of financial resources influences the implementation of DRR guidelines in Public Secondary Schools in Meru South District.
- iv. To determine the extent to which monitoring of schools by government agencies influence the implementation of DRR guidelines in Meru South District.

1.5 Research questions

The following research questions guided the study:-

- i) To what extent does involvement of stakeholders in decision making influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?
- ii) To what extent does community sensitization influence the implementation of the DRR in Public Secondary Schools in Meru South District?
- iii) To what extent does availability of financial resources influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?
- iv) To what extent does monitoring by government agents influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?

1.6 Significance of the study

The findings of the study may assist the school management to come up with strategies to enhance disaster risk reduction. This may in return save money that could otherwise have been spent on repairs and maintenance to be channeled to other development projects in the school. The findings of the study may enhance the government organs to monitor and evaluate the implementation of disaster risk reduction guidelines in public secondary schools. Moreover, it may also help to enhance the government effort to provide financial support for implementation of the guidelines. It may also trigger the effort by the school management to sensitize the community as a way of disaster risk reduction. The study may provoke more research by future researchers to add to the body of knowledge in the area of disaster risk reduction and safety in public schools so as to ensure full implementation of the DRR guidelines.

1.7 Limitations of the study

Mugenda and Mugenda (2003) refer to limitation as those aspects that may negatively affect the results of the study but which the researcher has no control of. The limitation of this study may be that of bias on the part of the principals where they may want to create the impression that they are doing very well. This was addressed by assuring the respondents that the information provided would only be used for the purpose of the study.

1.8 Delimitations of the study

Delimitation refers to the boundaries set by researcher in order to control the range of study. They delimit scope of study and define the boundaries. They are in the control of the researcher (Simon, 2011). This study was delimited in that it was confined to four objectives and research questions while disaster risk reduction is a wide topic. The study was confined only to public boarding schools and only in Meru South District.

1.9 Assumptions of the study

The study was based on the assumption that;-

- i) Questionnaires were adequate instruments of data collection,
- ii) The respondents were honest,
- iii) The school community is aware of the Ministry of Education safety guidelines,
- iv) Certain factors influence the implementation of disaster risk reduction guidelines which has not been done satisfactorily.

1.10 Definition of significant terms

The following are definitions of significant terms as used in the study;-

Disaster risk reduction guidelines refer to recommended practices that the school should undertake to meet the safety standards suggested. It also refers to the systematic efforts to analyze and manage the causal factors of disaster through reduced exposure to hazards, limited vulnerability of people and

property, wise management of land and environment and improved preparedness for adverse effects.

Disaster impact refers to actual hazard event or its immediate consequences requiring extra ordinary response.

Disaster mitigation refers to the act of preventing or minimizing the adverse effects of disaster causing phenomena through introduction of measures designed to prepare and protect life and property of the members of the society before the occurrence of the phenomenon. Mitigation includes activities that prevent a disaster, reduce the chances of a disaster from happening, or reduce the damaging effects of unavoidable natural phenomena.

Disaster preparedness refer to a state in which individuals or groups of a community have developed plans, allocated resources and established procedures for an efficient and effective implementation of the plans for the purpose of saving lives and preventing further damage to property in the event of disasters. Preparedness includes plans or preparations made to save lives and to help response- and rescue operations.

Disaster risk management refer to the systematic process of using administrative decisions, organization operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards. It comprises all forms of activities, including structural and non-structural measures to avoid or limit adverse effects of hazards.

Disaster risk reduction refers to the systematic efforts to analyze and manage the causal factors of disaster through reduced exposure to hazards, limited

vulnerability of people and property, wise management of land and environment and improved preparedness for adverse effects.

Early warning refer to the process of information gathering and policy analysis to allow the prediction of developing crises and action either to prevent them or to contain their effects.

Emergency refer to any situation in which the life or well-being of a community will be threatened unless immediate action is taken and which demands extra ordinary response and exceptional measures.

Hazard refer to a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods, and services, socio and economic disruption, or environmental damage.

Mobilization of financial resources refers to sourcing for sufficient funds.

Mitigation refers to measures undertaken to limit adverse effects that result from hazard.

Public awareness refer to the extent of common knowledge about disaster risks, the factors that lead to disasters and actions that can be taken individually and collectively to reduce exposure and vulnerability hazards.

Resilience refers to the schools ability to operate again after disaster.

Risk refers to the probability of harmful consequences, or expected loss of lives, people injured, livelihoods, disruption of activities and damages to the environment.

Stakeholder involvement refers to a situation where all parties concerned in the running of a school take part in decision making and planning for implementation of the guidelines.

Sensitization of the community refers to creating awareness among the members of the institution on all plans and decisions pertaining to implementation of DRR guidelines by the school management.

School Safety refers to measures taken by students, parents and stakeholders to minimize or eliminate risk.

Vulnerability refers to factors of the community that allow a hazard to cause disaster or the result of a number of factors that increase the chances of a community being unable to cope with an emergency.

1.11 Organization of the study

The study was organized into five subheadings: Chapter one has the introduction, which comprises the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, assumptions of the study, definition of significant terms and organization of study. Chapter two comprises the literature review which provides the introduction, the concept of disaster risk reduction, sensitization of the community and implementation of DRR guidelines, involvement of stakeholders in decision making and implementation of DRR guidelines mobilization of financial resources and implementation of DRR guidelines, monitoring by the government agencies and implementation of the DRR

guidelines, the summary of literature review, the theoretical and conceptual framework.

Chapter three composes the research methodology which consists of the introduction to research methodology, research design, target population ,sample size and sampling procedure, research instruments, instrument validity, instrument reliability, data collection procedure and data analysis techniques. Chapter four consist analysis, presentation, interpretation and analysis of data. Chapter five comprises summary of the study, conclusion, recommendations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on previous studies carried out by researchers with regard to disaster risk reduction (DRR) guidelines and related to the present study. The review focuses on the concept of disaster risk reduction and the extent to which the following factors influence the implementation of the guidelines; stakeholder involvement in decision making, the sensitization of the community on DRR, the availability of financial resources, and monitoring by government agencies. It has also the summary of literature, conceptual and the theoretical frameworks.

2.2 The concept of Disaster Risk Reduction (DRR)

Natural disasters are not uncontrollable, random events. Climate change is increasing the strength and frequency of storms, cyclones, floods and droughts. The impact of these disasters depends on people's vulnerability and their ability to cope. By building community resilience and by helping people to adapt to climate change, we can reduce the impact of future disasters.

The UN International Strategy for Disaster Reduction (ISDR) Secretariat, tasked with supporting governments in the implementation of the Hyogo Framework, undertook a global campaign, Disaster Risk Reduction Begins at School from 2005 to 2006, mobilizing global efforts to integrate disaster risk reduction (DRR) into school curricula as well as school safety infrastructures

and procedures (UNISDR, 2007). When the Second Session of the ISDR Global Platform for Disaster Risk Reduction was held in 2009, commitments were made to integrate DRR into school curricula by 2015, commitments that were reinforced at the 2011 Third Session of the Global Platform (UNISDR, 2011).

In the compilation of national progress reports on the implementation of the Hyogo Framework curriculum indicator, 2009-11, just over half of the 70 reporting countries relate the inclusion of DRR-related themes and topics, mainly at the primary level (UNISDR, 2011b). Thus, while overall governments were ready and willing to respond to the Hyogo imperative and to meet the 2015 deadline, they still lacked an understanding of the nature of DRR-related curricula and how to develop and implement them. There was a proliferation of documentation offering glimpses of good practices and pointing to windows of opportunity in curricula for integrating DRR, but no clear picture of how to proceed and little way of knowing what other countries were doing (Ibid). A critical mapping was therefore called for.

A study carried out in Pennsylvania (2011) observed that students learn best and achieve their fullest potential when they are physically, socially and emotionally safe. It further noted that for students and staff to perform at their best, they must feel safe in all aspects of their experiences which require concerted effort from all stake holders. The study further noted that the quality

of relationship between staff and students, between staff and families most strongly define safe schools.

According to Kenya Safety Standards and Guidelines Manual (2008), the school management should create mechanisms and procedures that ensure stakeholders are conversant with measures needed to prevent occurrence of disasters and steps required to reduce the impact. The guidelines recommend a safe school committee to monitor school safety needs for purpose of identifying problems, recommending programmes and policies for school safety and assisting in crisis management and post crisis response. It may also serve as the steering committee for self-assessment and planning.

2.3 Impact of disasters in school

The World Education Forum's Dakar Framework for Action: Education for All (EFA) (UNESCO, 2000) acknowledged that natural hazards pose significant challenges to countries in meeting their EFA goals, and would require international level support. Worldwide 875 million school children live in high seismic risk zones, with 32 million of these children newly enrolled in primary education (Wisner, 2004). As this threat has continued to grow, neither national nor international commitments have kept pace with the huge numbers of children affected. A partial list of the physical impacts of disasters on schools, school-children, and teachers provides compelling evidence that cannot be ignored. School buildings destroyed must be rebuilt at much greater cost than the 4-8% average incremental cost of disaster-resistant construction.

Some of these events will continue to strike during the school day, when vulnerable school buildings will collapse and may cost tens of thousands of children their lives if no action is taken (Lopez, 2007).

Disasters have physical impacts. The ultimate exclusion occurs when students and staff are killed in unsafe schools, built in harm's way, or not built to withstand expected and recurring natural hazards. Non-structural hazards like falling objects, bursting pipes, and blocked fire exits can also cause death and serious injury. Damaged schools disrupt hard won educational rights. When instruction time is lost, quality of education drops. When there are no plans for alternative locations and students are denied continuous schooling, many will never be able to catch up and will drop out permanently. When educational records are missing, students may fail to matriculate and go on to further education. Lack of resiliency development and prior empowerment leaves school communities ill-prepared to deliver psychological first aid and to recover rapidly. Students lose a sense of continuity and their hopes and plans for the future are destroyed (Izadkhah, & Hosseini, 2005).

Basic education and disaster prevention go hand in hand. The methods for recognizing and assessing the future impact of hazards, vulnerabilities and risks and identifying strengths and capacities happen to contain the fundamentals of scientific thinking as well as the basics of good citizenship and participatory governance (Grant, & Damian, 2007). The values, attitudes and technologies needed for physical protection; informed planning,

environmental stewardship disaster-resilient design and construction, are the same as those fundamental to sustainable development and livelihood security. The skills and provisions for disaster response are empowering and confer safety in everyday life. Disaster resiliency is built upon a foundation of analytical and problem-solving skills and draws from the development of personal and inter-personal intelligences (Finnis & Kirsten, 2007).

Fortunately disaster risk reduction is not just “one more thing” to be squeezed into an already full curriculum. It may well be the glue that ensures the survival of our children and future generations. Progress on millennium goals notwithstanding, unsafe schools have and will continue to betray the trust and hope placed in them, unless educational authorities and communities are conscious and pro-active (Benson & Jon, 2008).

Children and teachers will continue to be killed and injured in huge numbers, *while* at work in their school classrooms, unless responsibility is jointly taken now to make them safe. Children will continue to be excluded from school because plans have not been made for fully expected and recurring hazards, unless school communities take responsibility now for contingency planning. All of these are within our grasp – and all convey the poignant truth that humankind sustains itself through the power of education (Petal, 2008)

School buildings can and should minimally be designed and constructed to prevent collapse, partial collapse or other failure that would endanger human

life when subject to expected wind, water, avalanche, landslide or shaking hazards. If the buildings are to be occupied immediately after a disaster for school, for shelter or emergency operations they can be designed and built to a higher standard than normal construction (OECD, 2004). The necessity for standardized building codes that treat schools as critical infrastructure and as high occupancy buildings requiring a higher standard of performance than regular residential buildings is only a starting point. In spite of standardized building codes in most countries, school buildings remain vulnerable. Many countries continue to spend public funds, development banks make loans, and donors sponsor school construction projects where disaster resilience is not a consideration (ADPC, 2008). The incremental cost of building schools safely has been variously found to be 4-12%. The cost of building all schools safely does not compare with the cost of replacing them, after they have injured or killed those they were intended to benefit (Wisner 2004).

Public education buildings are often the joint concern of several different government authorities: the national education ministry, a regional or local educational authority, planning or public works departments, municipalities and local communities. Complicated responsibility and accountability can allow school safety to fall through the cracks so an important first step is to clearly identify the bodies and the individuals responsible and accountable for the viability of school infrastructure. The leadership and imperative for school safety usually comes from the highest government education authority. Generally it is a government body that issues a completion certificate attesting

that the building has been constructed per specifications and requirements, and is fit for occupancy (Ronan, & D. Johnston, 2005).

The expertise needed to make safety a reality comes from the earth scientists and climatologists who research the hazards, the local school communities who live with these hazards, the engineers and architects who design the buildings, the public works authorities who set and enforce building standards or authorize construction, the vocational school trainers and contractors who train and supervise the builders, the builders who work with available local materials, the teachers and students for whom the building must be a safe and comfortable place to learn, and the parents who release their children based on their trust in this system. Where NGOs, religious groups or local communities are the designers, builders and/or maintainers, (especially of rural and primary schools) they also assume the responsibility and accountability (Schick, 2007).

Bringing all of this knowledge together with a single focus, to those who can put it into action is indeed an educational challenge. School safety begins with school site selection, disaster-resilient design and construction from the beginning, or more costly retrofitting for safety afterwards, and continues through building use and maintenance. User communities must be involved from the beginning through the end (Turkmen, 2007). Building code compliance depends on builders and consumers alike having a basic understanding of its purpose and principles. Workers and contractors also need comprehension of specific construction detailing and the reasons for it as well.

Punitive building code enforcement, after the fact, can only pick up those who are slow to get the message (UNESCO, 2007).

2.4 Stakeholders involvement in decision making on implementation of Disaster Risk Reduction guidelines

The study aims at reviewing literature on the extent to which involvement of stakeholders in decision making can influence the implementation of DRR guidelines. The national crime prevention council, Washington DC USA (2003) produced a school safety and security tool kit. The action team composed of school staff, parents, students and other community members. They were dedicated to assessing school safety and security threats, developing strategies for action, facilitating improvement and evaluation of outcome.

In New Jersey department of education, the safe school manual is a checklist covering environmental safety. The manual is intended to assist the schools in meeting regulatory requirement. It is the duty of the school to ensure a safe school environment, the department emphasizes on the need to involve all stake holders in identifying the needs, developing intervention measures, evaluating physical facilities, providing training for staff and students.

In Rwanda it was observed that the way in which the school infrastructure is designed and managed can assist in developing strong partnership between the community and school. The community must be considered throughout the

decision making process (RMOE 2009). According to the resource manual for self-assessment, planning and training to improve school safety (1999) a school safe committee should comprise of relevant stakeholders. According to the manual, the community has the responsibility to monitor school safety needs for purpose of identifying problems, recommending programmes and policies for school safety. It assists in crisis management and post crisis response.

According to the Republic of Uganda (2010), individuals within communities have valuable information and resources to share on the likelihood, causes and consequences of disasters, given that they have a rights and obligation to participate in key decisions that affect their lives, they are called upon to prepare for and respond to disasters. During the launch of the safety manual for schools in Kenya in 2008, the then minister for Education, Professor Ongeru noted that this manual could only be implemented successfully if teachers, parents, guardians BOGs and policy makers worked as a team. Migiro (2012) investigated the implementation of safety standards guidelines in Borabu District, Kenya. The study was carried out on 11 out of the targeted 21 public secondary schools, the study recommended that the government should ensure that the community and society are positively involved and should contribute in enhancing school safety.

Armstrong (2006) recommends that role of safety and representatives and committees be defined and duties summarized. It would be difficult for stake

holders to participate if they are not aware of what they should do. This can be confirmed by the ugly incident where eight pupils of Asumbi Girls Boarding Primary School in Homa Bay County in 2012 burnt to death. They were trapped in a locked dormitory when a fire broke out. During the episode, it was reported that a watchman refused to open the gate for the neighbors to assist put off the fire while there was no functioning fire extinguisher. In this case the watchman and matron were either irresponsible or ignorant.

2.5 Community sensitization and implementation of Disaster Risk Reduction guidelines

Community participation has been recognized as the additional element in disaster management necessary to reverse the worldwide trend of exponential increase in disaster occurrence of and loss from small- and medium-scale disasters, build a culture of safety, and ensure sustainable development for all. Recent experiences and practices, particularly those in the Asian Urban Disaster Mitigation Program, showcase significant elements from which lessons are drawn (Von Kotze, & Holloway, 1996). Positive impact affirms the validity of the community based approaches to disaster mitigation, notwithstanding the difficulties, complexities and challenges faced to initiate, sustain and replicate major benefits of the community based risk assessment, mitigation planning and implementation processes underscored include building confidence, pride in being able to make a difference, and enhanced capabilities to pursue disaster preparedness, mitigation as well as bigger development responsibilities at the local level (Wisner, 2006). Additionally,

individual and community ownership, commitment and concerted actions in disaster mitigation, including resource mobilization produce a wide range of appropriate, innovative and do-able mitigation solutions, which are cost-effective and sustainable.

López and Espinosa (2007) indicates that good practices in the community based approaches to disaster mitigation highlight key success factors such as applying best practice methodologies of community development to community based disaster mitigation, tapping traditional organizational structures and mechanisms (including formal and informal community leaders), and capability building activities with the community disaster committees and volunteers.

The importance of various forms and channels of public awareness and education using local dialects, values and culture and partnerships of the community with various stakeholders such as community based organizations, community leaders, local government units, higher level government, NGOs, less vulnerable groups, and donors were also noted (NEETI Solutions, 2008).

Within the last decade, growing recognition of the necessity of community participation for sustainable disaster reduction was translated into actions to realize community based disaster management (Finnis, & Kirsten, 2007). Parallel efforts in various regions worldwide called for a shift in perspective from the prevailing emergency management framework to disaster risk management to reverse the trend of exponential increase in disaster occurrence

of and loss from small- and medium-scale disasters (Grant, 2007). These highlighted the need for proactive disaster management activities and the significant role of local communities. The community based approach also corrected the defects of the top-down approach in development planning and disaster management which failed to address local needs, ignored the potential of indigenous resources and capacities, and may have even increased people's vulnerabilities (Schick, 2007).

Disaster and risk reduction education can provide life sustaining information and skills that better protect people from disaster risks and empower them to respond to emergencies and contribute to mitigate disasters. Study of safety guidelines for physical activity in Alberta schools (2008) established that well planned physical activity programme reduces the frequency and severity of injuries. By implementing safe instructional practices, such as use of sequential teaching, progression helps the teacher guard against foreseeable risks.

Berlein (2009) investigated the manner in which rural public schools implemented the safe school regulations prescribed by the South African School Act to ensure learner safety. The qualitative study investigated through interview of the school principals and observation of the school activities to determine compliance with the set safety standards. Observation of physical infrastructure, procedures for playground a, firefighting and fire drills were observed. The safety policy for each of the schools was analyzed. The research

concluded that none of the schools had an effective and practicable safety policy in place and were not even implementing their inadequate policies. The study recommended comprehensive compulsory school safety training for all stakeholders to ensure implementation of DRR guidelines.

According to India's status Report (UNCRD 2008), though children are vulnerable to threats posed by natural hazards, they can be powerful agents of change. According to Sitati (2010) sensitization is done through training where the community is informed of hazards in the environment and how to react in the event of an emergency as well as where safety equipment are kept. This gives the community sufficient knowledge with regard to safety requirements and expectations which ensures that no member is exposed to risk out of ignorance.

According to the Republic of Uganda (2010) individuals in the communities can only participate in disaster planning if they have updated knowledge and information on the likelihood of disasters and on the appropriate ways of responding to them. The media, community leaders and stakeholders shall be called upon to create awareness on various aspects of disasters. It attributes effective disaster preparedness to constant reviewing and upgrading of institutional capacity to cope with disaster at all levels.

Uganda (2010) requires the Ministry of Education to mainstream disaster risk management in the education curriculum at all levels. This would create

awareness on risks and hazards in the society and how to manage them. Since students and children are good educators of the community, they contribute to community on risk and hazard management once equipped with knowledge at school.

Otula (2007) argues that implementation may be done through sensitization of stakeholders by way of disaster preparedness which either combats the disaster or minimizes its effects. Kirui, Mbugua and Sang (2011) in their study of challenges facing head teachers in security management in Kisii District, noted that schools were facing insecurity as students, teachers, board of management and security personnel were not well versed with strategies useful in handling security issues and that most schools were not prepared for disaster management.

Mburu (2012) in his study of factors influencing implementation of safety guidelines in public schools in Limuru District employed descriptive survey as the research design. Questionnaires, interview schedules and check lists were used to collect data. One of the recommendations was that the school community be sensitized through training and awareness programmes.

Thomas (2009) argues that training programmes help to ensure staff members are familiar with DRR. Rono and Wambua (2009) concurred that safety preparedness depends on safety training and awareness programmes. According to UNICEF child friendly schools, training teachers and students

in first aid skills and installing fire extinguishers, emergency lighting, scheduling evacuation drills and creating designated assembly points, safe areas and ways of calling for assistance prepares the school community to face disaster in case it strikes in agreement with Otula (2007).

Wanyama (2011) in his study of level of compliance with safety standards for emergency response in public secondary schools in Sabatia District concluded that most schools had not fully complied with the safety guidelines and recommended training for all head teachers in school safety. Otieno (2010) reported that most schools in Kenya had no capacity to handle emergencies and were yet to even implement the 2008 guidelines. He further reported that school management and some parents admit that some schools are sitting on a time bomb. This report came after two boys were burnt to death when the dormitory was torched. The said dormitory had grills fitted on the windows against the guidelines. He recommended training for all stakeholders.

2.6 Availability of financial resources and implementation of Disaster Risk Reduction guidelines

The school management may source funds from grants, appropriation in aid, volunteers, parents and other well-wishers. The study aims at reviewing literature on the extent to which availability of financial resources influences the implementation of safety guidelines. According to the research by Kirui, Mbugua and Sang (2011) the causes of insecurity in schools include low

budgetary allocation for safety issues, and lack of safety mitigation measures in schools.

During the launching, the Ministry of Education provided funds for all national and provincial schools funds to purchase firefighting equipment. This was a one-time activity. Hence the school management should mobilize funds for the purpose. In his study of the implementation of safety guidelines, Migiro (2012) established that most schools in Borabu District Kenya had not fully implemented the guidelines and that the schools faced several challenges among them inadequacy of funds. The study recommended that the Ministry of Education step up school safety inspection and seek ways of advancing funds to schools to enhance safety.

This is in agreement with the findings of Macharia (2012) which established that inadequate funds and rare assessment by quality assurance and standards officers hampered the implementation of the safety guidelines in Limuru District. This is also in line with the findings of the study coordinated by Koriang (2009) where the main constraints to the implementation of safety guidelines in Turkana South District, other than funding and monitoring also included lack of goodwill, training and capacity building.

Musimba (2012) in the study of implementation of safety guidelines in Machakos District established that most schools had not fully implemented the safety guidelines citing inadequate funds as a major challenge. The study

conducted in Kisumu District, (Omolo and Simatwa 2010) established that inadequate funds was the most significant factor in influencing the implementation safety manual (The Standard, 2nd August 2006:4) MOEST disbursed 810 million shillings to 717 Provincial Boarding Schools to purchase fire equipment while Wanyama (2011) recommended the provision of finances to facilitate fixing of relevant equipment for disaster preparedness.

Anderson and Creswell (1980) recommended that every school building should have a fully stocked First Aid Kit with responsible person in charge. The construction of appropriate physical facilities, training and monitoring all require funds. It is hence necessary for the school management to mobilize financial resources to ensure budgetary allocations for the safety docket. Nderitu (2009) on her study of implementation of safety guidelines reported that school fire disasters were caused by poor firefighting equipment, among others.

2.7 Monitoring by Government agencies and implementation of safety guidelines

UNICEF (2011) defines monitoring as the process of identifying potential risk through regular inspection to either eliminate or control the hazards without delay. It perceives the role of schools in child protection as that of recognizing situations needing attention and referring them to the appropriate stakeholders. Monitoring is the act of supervising activities in progress to ensure they are on course and on schedule in meeting the objectives and performance targets.

Monitoring by the government is aimed at enforcement of adherence to the safety requirements; it should therefore start with approval of building plans (Mbugua 2010). According to Mc Glynn and Stalker's (1995), findings of an inspection are used to identify aspects requiring attention and improvement in individual schools and to inform national and regional educational policy, practice and development. It is not therefore possible to establish whether the safety guidelines are being implemented without monitoring, neither would it be possible to address any challenges facing the implementation.

In UK, designers are legally bound to design out of risks during design development to reduce hazards in construction; many NGOs have been established to support the aim. Some notified bodies provide testing design verification services to ensure compliance with safety standards defined in regulation codes such as American society of mechanical engineers (Behm 2005).

Continuous inspection is a powerful tool in terms of checking breaches and ensuring conformity with standards, all school facilities should comply with the provision of the Basic Education Act (2013), and public works building regulations.

2.8 Summary of literature review

The literature review has revealed critical factors that influence DRR. on sensitization of the community, the INEE 2012, Berlin 2009, UNICEF 2011,

Thomas 2007, Sitati 2010, Mburu 2012, Sitati 2010, Kirui, Mbugua and Sang, Wanyama 2011, Otieno 2010 among others established that awareness created among members of the community influence implementation of disaster risk reduction guidelines.

Studies from Washington DC, State of New Jersey, Rwanda, Kenya (2008), Migiro (2012), Armstrong (2006) all established the influence of involvement of stake holders in decision making on implementation of disaster risk reduction. Anderson and Creswell (1980), Macharia (2012), Koriang (2009), Migiro (2012), Musimba (2012) and Simatwa all established the influence of availability of financial resources on implementation of disaster risk reduction guidelines.

The State of New Jersey, UNICEF (2011), Mc Glyn and Stalkers (1995), Simatwa (2010), Omollo (2012), and Mbugua (2010) established the influence of monitoring on implementation of disaster risk reduction. It is worth noting that no research on implementation of disaster risk reduction guidelines has been done in Meru South though schools in the District has experienced fires, floods and windstorms among other types of disaster resulting to destruction of property, loss of life and disruption of normal programs over the years. This implies that there is still a knowledge gap as far as implementation of DRR guidelines is concerned. This has made it imperative to carry out this study that can be generalized not just for the schools in the District but also for all schools in the county.

2.9 Theoretical framework

The theoretical framework has implications for every decision made in research proposal according to (Crotty, 1998) .This research is based on Abraham Maslow's hierarchy of needs theory (1943) proposed in USA. It describes the different human needs and how they relate to several factors in their life. According to Armstrong (2006) the hierarchy of needs include, psychological needs, safety needs, social needs, esteem needs and self-actualization needs. The first four are deficiency needs while stage five is a growth motivator that is rarely achieved. The theory is therefore used to explain human behavior as aims and drives are always significant to the next order need. This is demonstrated by the figure below;-

Figure 2.1

Maslow's hierarchy of needs (source: Okumbe 2007)



The theory states that needs are satisfied in their order, in which case a higher need only becomes a priority once the lower need is met. The theory describes safety need as the protection against danger, and deprivation of psychological, Okumbe (2007).

The theory will form an important basis for this study in that it recognizes security as a basic need without which, learners cannot achieve their fullest potential. The school community is motivated to pursuing other needs such as, social needs and self-esteem when secure. According to Maslow each one is motivated by needs and each need is satisfied in turn, and that when a lower need is satisfied, the next highest need becomes dominant and the individual's attention automatically focuses on satisfying that need.

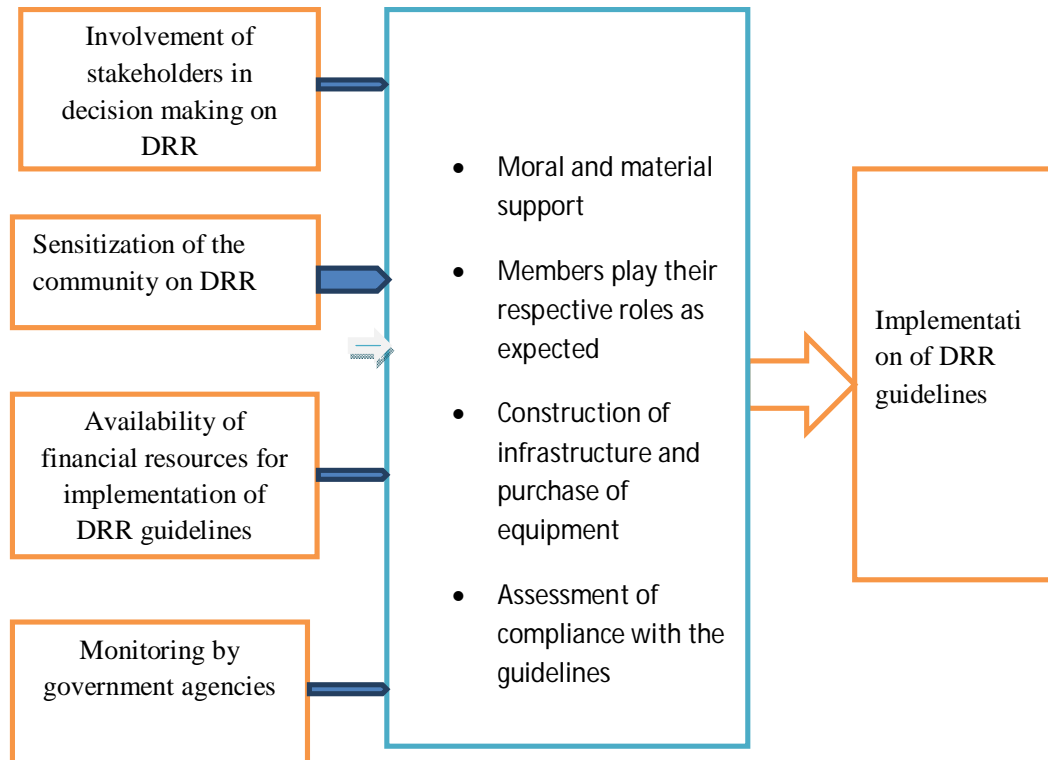
The disadvantage of the theory is its simplicity which tends to limit appreciation of Maslow's vision and humanity which are still sensitive to date,

while its advantage is that it is simple and elegant for understanding human motivation. Depriving students of safe secure environment is denying them their fundamental human right as embedded in the laws of Kenya (2010).

2.10 Conceptual framework

According to Orodho (2006) a conceptual framework assists the researcher to see the proposed relationship between the dependent and independent variables. The diagram below shows the interrelationship between the dependent variable ,in this case implementation of disaster risk reduction and independent variables, that are involvement of stakeholders in decision making, sensitization of the community, availability of funds and monitoring by government agents as demonstrated by the figure below;-

Conceptual framework



Involvement of stakeholders in decision making on DRR will build a sense of ownership by the stakeholders and provides information. This makes them instrumental in provision of both moral and material support thereby enhancing implementation of the guidelines. Sensitization of the community gives insight and enables members to be aware of their roles to prevent occurrence of disaster or to manage disaster when it occurs. Availability of financial resources will ensure implementation of the DRR guidelines in that sufficient budgets will then be prepared to construct appropriate infrastructure, purchase important equipment such as fire fighters, create awareness as well as for monitoring the extent of compliance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the research design, target population, sample size and sampling procedures, research instruments, research instrument validity, and reliability, data collection procedures, and data analysis techniques.

3.2 Research design

The study adopted a descriptive survey research design to establish the factors influencing the implementation safety guidelines in public secondary schools in Meru South. The design was suitable for the study as it entails collecting data by administering questionnaires and interviewing selected samples. According to Orodho (2009), survey design is most frequently used to collect information about people's attitude, opinion or habits in social issues. The method would therefore be used to collect information through a questionnaire based on a check list.

3.3 Target population

According to Kombo (2006), all population under consideration in the field of inquiry constitutes a universe or targeted population. In this study, all the 20 head teachers and the 20 boarding masters in the 20 public secondary schools in Meru South constituted the census.

3.4 Sample size and sampling procedure

Meru South district has 20 public boarding secondary schools categorized as National schools, extra-county schools, County and District schools. The study targeted 20 public boarding secondary schools, and 20 boarding masters. This is because boarding facilities are most prone to disaster as evident from previous research findings. Simple random sampling was used to pick a school from the target study population for the pilot study.

3.5 Research instruments

The study used questionnaires as the main instruments of data collection. The questionnaire is suitable in that it collects a lot of information within a short time and also ensures standardized questions for all respondents. It also ensures anonymity and hence confidentiality (Orodho, 2005). The method included close ended questions in which case specific answers to questions will be got. The questions were clear and simple and this motivated the respondents. A checklist was also used for observation to assess the level of compliance with the guidelines to describe existing situations using five senses providing a written photograph of the situation under study.

3.6 Research instrument validity

Validity defines the degree to which results obtained from data analysis actually represent the phenomenon under study (Orodho 2005). It checks whether the research instruments met the intended purpose. This was done by testing the research instrument; in this case the questionnaires were

administered beforehand (piloting) to establish content validity or ambiguity. It provided for amendments on it if necessary. Piloting tests validity as it helps in revealing deficiencies in questionnaire, and enhances a researcher ability to conduct interview (Mugenda & Mugenda, 2003).

3.7 Research instrument reliability

Reliability measures the degree to which a research instrument yield consistent results after repeated trials to the same respondents. Mugenda and Mugenda (2003) like Orodho (2005) define reliability as the level of internal consistency where reliability was assessed using test retest method. This was done by issuing respondents with questionnaires to fill in, the same questionnaires issued again and a comparison of responses for the first and second time made. Pearson's product moment formula was employed to compute correlation coefficient to establish its consistency where according to Orodho (2009) a correlation coefficient of about 0.75 is sufficient to judge the reliability of an instrument.

3.8 Data collection procedure

Through an introductory letter from the Department of Educational Administration and Planning, University of Nairobi, permission was also sought from the National Council of Science, Technology and Innovation. The researcher also sought permission from the County Commissioner and the County Director of Education The researcher then prepared a schedule for schools to be visited and then alerted the principals of the intention to visit the

school so as to make an appointment. Both primary and secondary data were collected. Secondary data was information from books, journals, newspapers and manuals among others while primary data was obtained from questionnaires, interviews and observation. The researcher administered the questionnaires in person to ensure that most of them were returned. This made it possible to make necessary observation of the physical infrastructure using a check list.

3.9 Data analysis techniques

Kombo and Tromp (2006) refer to data analysis as examining the information collecting survey and making deductions and inferences. Data collected were analyzed using descriptive statistics. Quantitative data was from questionnaires; while qualitative data was analyzed through thematic analysis data was quantified through descriptive statistics such as percentages. Statistical Package for Social Sciences (SPSS) was used to analyze data while graphs, pie charts, tables and figures were also be used to present data. This made it possible to answer research questions as per the study objectives. All the research questions were analysed by use of qualitative techniques.

CHAPTER FOUR

DATA ANALYSIS, INTERPREATION AND DISCUSSION

4.1 Introduction

This study investigated the implementation of disaster risk reduction guidelines for public boarding secondary schools in Meru South District. The study specifically investigated extent to which involvement of stakeholders in decision making, sensitization of the community, availability of financial resources and monitoring of schools by government agencies influenced the implementation of disaster risk reduction guidelines in Meru South District. This chapter presents the data analysis and interpretation of the findings. The chapter presents the questionnaire return rate, demographic information of the respondents and then the analysis of data based on the research objectives.

4.2 Questionnaire return rate

Questionnaire return is the proportion of the questionnaires returned after they have been issued to the respondents. In this study, out of 20 principals and 20 house masters sampled by the study, 19 principals and 19 house masters completed and returned the questionnaires. The return rates stood at 95%, well above the required threshold of 80%, hence deemed adequate for analysis.

4.3 Involvement of stakeholders in decision making

One of the objectives of the study was to establish the extent to which involvement of stakeholders in decision making influence the implementation of disaster risk reduction guidelines. The researcher posed items to the

principals and house masters to establish the extent to which stakeholders' involvement in decision making influenced the implementation of disaster risk reduction guidelines in public secondary schools. The principals were asked to indicate the way that they involved stakeholders in decision making. The data is presented in Table 4.1.

Table 4.1 Principals' stakeholder involvement

Statement	Yes		No	
	F	%	F	%
Parents meetings	19	100.0	0	0.0
Students council meetings	19	100.0	0	0.0
Suggestion box	17	89.5	2	10.5
Class meetings	19	100.0	0	0.0

Data shows that the principals indicated that they involved the stakeholders in decision making through parents meeting, students council meetings and class meetings. Involvement in decision making enhanced the implementation of DRR in the schools. 17 principals (89.5%) reported that they had suggestion boxes while 19 (100%) reported that they had class meetings in their schools, respectively. The data shows that there were different ways in which the stakeholders were involved in decision making on implementation of disaster risk reduction guidelines in public secondary schools, thereby making all those concerned to own the decisions and making the implementation smooth.

The school principals were further asked whether they had morning assemblies and code of rules and regulations. Table 4.2 presents their responses on whether they had morning assemblies and code of rules and regulations.

Table 4.2 Principals’ responses on morning assemblies and code of rules and regulations

Reasons	Yes		No	
	F	%	F	%
Morning assemblies	19	100.0	0	0
Code of rules and regulations	19	100.0	0	0

Table 4.2 shows that there were morning assemblies and code of rules and regulations in schools as indicated by all the principals. The findings indicate that all the schools studied had certain measures in place to enforce the implementation of safety guidelines. However, none of the schools was found to have complied wholly. This implied that all schools involved stakeholders in decision making though some schools (10.5%) did not have a suggestion box where the school community could air their views.

To establish the level of compliance the housemasters were asked to indicate the disaster risk reduction guidelines items that they had in their schools.

Table 4.3 tabulate the findings

Table 4.3 House masters responses risk reduction

Resources	Yes		No	
	F	%	F	%
Clean/boiled drinking water	18	94.7	1	5.3
A mechanism for detection of early sign	13	68.4	6	31.6
Clearly stated evacuation procedures	6	31.6	13	68.4
Electrical appliances regularly checked by electrician	17	89.5	2	10.5

As indicated in Table 4.3, majority (94.7%) of house masters indicated that their school had clean/boiled drinking water, (68.4%) of house masters revealed that they had a mechanism for detection of early sign with the same number of house masters indicating that they lacked a clearly stated evacuation procedures, while majority (89.5%) of house masters had a electrical appliances regularly checked by electrician. The data shows that though there were various disaster management items in their schools, some lacked or had inadequate clearly stated evacuation procedures early warning signs and clean drinking water. This could adversely affect the implementation of disaster risk reduction guidelines in public secondary schools.

The above findings agree with Migiro (2012) who investigated the implementation of safety standards guidelines in Borabu District, Kenya. The study recommended that the government should ensure that the community and society are positively involved and should contribute in enhancing school safety. These findings can be confirmed by the hideous incident where eight pupils of Asumbi Girls Boarding Primary School in Homa Bay County in 2012 burnt to death. They were trapped in a locked dormitory when a fire broke out. During the episode, it was reported that a watchman refused to open the gate for the neighbors to assist put off the fire while there was no functioning fire extinguisher. In this case the watchman and matron were either irresponsible or ignorant, or both.

4.4 Sensitization of the community and its influence on the implementation of disaster risk reduction

To establish the influence of sensitization of the community on the implementation of disaster risk reduction, as focused by research objective two, the researcher posed items to the house masters to establish the monitoring actions taken in schools. Table 4.4 shows housemasters responses on teachers monitoring actions.

Table 4.4 House masters responses on teachers monitoring actions

Resources	Yes		No	
	F	%	F	%
Do teachers assess the premises daily	18	94.7	1	5.3
Is there a checklist used for monitoring	15	78.9	4	21.1
Do the students' leaders monitor	18	94.7	1	5.3
Are the results of monitoring shared with school management	19	100.0	0	0

Data in table 4.4 shows that majority (94.7%) of housemasters indicated that the teachers assessed the premises daily and that the students' leaders monitored and had to give status report. The study further shows that majority (78.9%) of house masters indicated existence and use of a checklist for monitoring while (100%) of house masters indicated that the results of monitoring were shared with school management.

This indicates that majority of the schools had implemented the DRR guidelines, and that a number of schools did not use a checklist during monitoring while some were not assessed at all, which is against the guidelines.

López and Espinosa (2007) indicates that good practices in the community based approaches to disaster mitigation highlight key success factors such as applying best practice methodologies of community development to community based disaster mitigation, tapping traditional organizational structures and mechanisms (including formal and informal community

leaders), and capability building activities with the community disaster committees and volunteers.

Asked to indicate students monitoring in the school, the housemasters responded as in Table 4.5, below.

Table 4.5 House masters responses on students monitoring

Resources	Yes		No	
	F	%	F	%
Is a roll call taken before students sleep	11	57.9	8	42.1
Are decker beds fitted with side grills	6	31.6	13	68.4
Is there a provision for solid waste disposal	17	89.5	2	10.5
Do the food handlers have medical certificates	19	100.0	0	0

Data showed that majority (57.9%) of house masters indicated that there was a roll call taken before students slept. Moreover, majority (68.4%) of house masters indicated that decker beds were not fitted with side grills. The study further shows that majority (89.5%) of house masters indicated that there was a provision for solid waste disposal while (100.0%) of house masters indicated that the food handlers had medical certificates. The data shows the schools put up structures necessary for the implementation of disaster risk reduction such as having medical certificates for food handlers, and provisions for solid waste disposal. However, the study indicated that a majority had not fitted decker

beds with side grills and some did not conduct a student roll call before they slept. This is against the DRR guidelines as it poses a risk of students falling off the bed while asleep. Failure to conduct a roll call would make rescue activity difficult incase of disaster when the number of those in the dormitory are not known.

Thomas (2007) argues that training programmes help to ensure staff members are familiar with DRR. Rono and Wambua (2009) concurred that safety preparedness depends on safety training and awareness programmes. Asked to indicate Ministry of Education and health practices in their schools, they responded as in Table 4.6, below.

Table 4.6 House master’ responses on the Ministry of Education and health practices

Resources	Yes		No	
	F	%	F	%
Does the ministry of health monitor the school	18	94.7	1	5.3
Do the Ministry of Education officers assess the school	19	100.	0	0
Are their exit points in the dormitories	17	89.5	2	10.5
Is there an incinerator where waste is burnt	5	26.3	14	73.7

Table 4.6 shows that majority 18(94.7%) of house masters indicated that the Ministry of Health monitored the school, 100 % of house masters indicated

that the ministry of Education officers assess the school. Data further revealed that majority (89.5%) of house masters indicated existence of exit points in the dormitories while (73.7%) indicated that their schools lacked an incinerator for burning solid waste. The above findings indicated that most schools complied with the DRR guidelines.

The findings are in line with Otula (2007) who argues that implementation may be executed through sensitization of stakeholders by way of disaster preparedness, which either combats the disaster or minimizes its effects. Kirui, Mbugua and Sang(2011) in their study of challenges facing head teachers in security management noted that, schools were facing insecurity as students, teachers, board of management and security personnel were not well versed with strategies useful in handling security issues and that most schools were not prepared for disaster management.

The findings further support the findings of Wanyama (2011) who concluded that most schools had not fully complied with the safety guidelines and recommended training for all head teachers in school safety. They are also in line with Otieno (2010) who reported that most schools in Kenya had no capacity to handle emergencies and were yet to even implement the 2008 guidelines. Otieno (ibid) further reported that school management and some parents admit that some schools are sitting on a time bomb. This report came after two boys were burnt to death when the dormitory was torched. The said dormitory had grills fitted on the windows which is against the guidelines. He recommended training for all stakeholders.

4.5 Disaster prevention based on availability of financial resources

To establish the disaster prevention based on availability of financial resources, the researcher sought to establish whether the school had purchased disaster prevention resources. Table 4.7 shows principals responses.

Table 4.7 Principals responses on availability of certificates, windows and door openings

Resources	Yes		No	
	F	%	F	%
Occupation certificate for occupied buildings	2	10.5	17	98.5
A school registration certificate	19	100.0	0	0
Grills removed from windows	17	89.5	2	10.5
The doors opening outwards	15	78.9	4	21.1

As presented in Table 4.7, majority (98.5%) of principals indicated that they did not have occupation certificate for occupied buildings, the same number of principals indicated that they had a grills removed from windows. The study further indicates that all the schools had school registration certificate while majority (78.9%) of principals indicated that they had doors opening outwards. This indicated that some schools were yet to remove grills from the windows, have their doors open outwards, and acquire occupation certificates for occupied buildings.

Table 4.8 (below) shows principals responses on availability of site plan, fire extinguishers and safety manual. The data shows that schools had complied with the disaster management practices in the schools. This implies that they had adhered to the guidelines.

The researcher also sought to establish from the respondents whether they had site plan, fire extinguishers and safety manual in their schools. The data is tabulated in table 4.8.

Table 4.8 Principals’ responses on availability of site plan, fire extinguishers and safety manual

Statement	Yes		No	
	F	%	F	%
A site plan in use	15	78.9	4	21.1
Fire extinguishers	15	78.9	4	21.1
A copy of the safety manual	18	94.7	1	5.3
A disaster response committee	5	26.3	14	73.7

As shown in table 4.8, majority (78.9%) of principals indicated that they had a site plan, fire extinguishers, and a copy of safety manual. However, they did not have a disaster response committee as required by the DRR guidelines. It further indicates that some schools had not implemented the DRR guidelines despite having a copy of the manual in the school.

They were also asked to indicate whether they had evacuation measures. The data is presented in table 4.9.

Table 4.9 Principals' responses on evacuation measures

Statement	Yes		No	
	F	%	F	%
Rapid evacuation measures	7	36.8	12	63.2
Evacuation maps	2	10.5	17	89.5
A clear telephone tree	5	26.3	14	73.7
Contacts for local authorities	17	89.5	2	10.5

The study established that a majority of principals (73.3%) had conducts for local authorities in compliance with the guidelines but 63.2% indicated that they lacked rapid evacuation measures, and 89.5%) lacked evacuation maps, all in contravention of the guidelines. Data further shows that majority 14(73.7%) of principals lacked a clear telephone tree. The findings above indicate that most schools had not implemented the guidelines in that they were ill prepared to face disaster as majority lacked rapid evacuation measures, evacuation maps and a clear telephone tree. This implies that there would be confusion in case of disaster.

The housemasters were also asked to indicate whether the schools had evacuation measures. Table 4.10 presents the house masters' responses on the availability of evacuation measures.

Table 4.10 House masters responses on availability of evacuation measures

Resources	Yes		No	
	F	%	F	%
Are the paths labeled to show direction	2	10.5	17	89.5
Are hurricane lamps used in the dorms	19	100.0	0	0
Enrolment based on bed capacity	17	89.5	2	10.5
Contacts for fire brigade	10	52.6	9	47.4

As tabulated in Table 4.10, majority (89.5%) of house masters indicated that they lacked labeled paths to show direction, the same number of house masters revealed that they had enrolment based on bed capacity. The data further revealed that 100.0% of house masters had hurricane lamps for use in the dorms while majority (52.6%) revealed that they had contacts for fire brigade. The above findings indicate that most schools lacked disaster preparedness as per the DRR guidelines. Even though hurricane lamps used in the dormitories pose a threat of fire disaster, a number of schools did not have contacts for the fire brigade. In addition, paths were not labeled to show direction. This implied that swift response to disaster would either not be possible or would be impended.

Asked whether their schools had purchased disaster prevention resources, they responded as shown in Table 4.11.

Table 4.11 Principals’ responses on whether the school had purchased disaster prevention resources

Resources	Yes		No	
	F	%	F	%
A well-stocked first aid kit	14	73.7	5	26.3
An alarm system	6	31.6	13	68.4
A whistle	16	84.2	3	15.8
Fire blankets	4	21.1	15	78.9

Data indicates that majority (73.7%) of principals had a well-stocked first aid kit and 68.4% lacked an alarm system. Data further shows that (84.2%) of principals had a whistle while (78.9%) lacked a fire blankets. All this is in contravention of the guidelines and would make disaster management difficult.

The findings above indicated lack of disaster preparedness in a number of schools where majority lacked an alarm system. This implies that it would take more time to alert the school community while lack of fire blankets would make it difficult to save fire victims.

The principals were further asked to indicate whether their schools had purchased extinguishers and lightening arresters. They responded as indicated in Table 4.12.

Table 4.12 Principals' responses on whether the school had purchased extinguishers and lightening resources

Statement	Yes		No	
	F	%	F	%
A flush torch	7	36.8	12	63.2
Fire extinguishers	14	73.7	5	26.3
Lightening arresters	1	5.3	18	94.7
Safety subcommittee	4	21.1	15	78.9

Majority (63.2%) of principals indicated that the school had not purchased a flash torch, while (73.7%) indicated that the school had fire extinguishers. Data further shows that (94.7%) of principals indicated that the school lacked lightening arresters while (78.9%) indicated that they did not have safety subcommittees in their schools. The above findings indicate that though the fire extinguishers were available in majority of the schools, a number lacked a flash torch, and safety subcommittees. This would make response to any disaster that occurs at night difficult while lack of a committee would result to poorly planned response.

The principals were also asked to indicate whether disaster prevention based on availability of financial resources. They responded as shown in Table 4.13.

Table 4.13 Principals’ responses on disaster prevention based on availability of financial resources

Statement	Yes		No	
	F	%	F	%
Inspection of the school by QASOs	17	89.5	2	10.5
Fire drills	8	42.1	11	57.9
Disaster management training for staff	6	31.6	13	68.4

Data shows that majority (89.5%) of principals had inspection of the school by QASOs, (57.9%) had fire drills, and majority (68.4%) of them lacked disaster management training for staff.

The above findings indicate lack of disaster preparedness in that most schools lacked fire drills and disaster management training for staff. This implies that in case of a disaster, trial and error method would be applied, and whose effect could cause more harm than good.

Asked whether they had fire brigade personnel talks and demonstrations, the principals responded as in table 4.14.

Table 4.14 Principals’ responses on the availability of fire brigade personnel talks and demonstrations

Responses	F	%
Yes	3	15.8
No	16	84.2
Total	19	100.0

Table 4.14 shows that majority (84.2%) of principals lacked fire brigade personnel talks and demonstrations while a dismal number (15.8%) had fire brigade personnel talks and demonstrations. This implied lack of awareness in disaster preparedness and management in some schools.

The researcher further sought to establish from the house masters whether there was a disaster crisis response teams and adequate space between beds.

Table 4.15 tabulates the findings.

Table 4.15 House masters responses on the availability of disaster crisis response teams and adequate space between beds

Resources	Yes		No	
	F	%	F	%
Is there a disaster crisis response team	3	15.8	16	84.2
Is there adequate space between beds	17	89.5	2	10.5

Data shows that majority (15.8%) of house masters indicated that there was a disaster crisis response teams while majority (89.5%) of house indicated that there was adequate space between beds. The findings indicate poor disaster preparedness in most schools, as there is no team set to respond to an on going disaster while there was inadequate space between beds in some schools which would hinder easy escape for students incase of disaster.

Analysis of the observation of resources in the schools

Table 4.16 presents the findings from observation of fire extinguisher items in the schools. **Table 4.16 Observation of fire extinguishers items**

Items	Yes		No	
	F	%	F	%
Are rooms littered	3	15.8	16	84.2
Are fire extinguishers strategically located	13	68.4	6	31.6
Is there a fire assembly point	8	42.1	11	57.9
Are there fire exits in the rooms	14	73.7	5	26.3

Table 4.16 shows that majority (84.2%) of schools rooms were not littered, majority (68.4%) of schools fire extinguishers were strategically located. Data further shows that majority (57.9%) of schools lacked a fire assembly point while majority (73.7%) were observed to have fire exits in the rooms.

The researcher also observed the disaster prevention resources in the schools. Table 4.17 shows the summary of the observations.

Table 4.17 Observation of disaster prevention resources

Resources	Yes		No	
	F	%	F	%
Are there lightening arrester	0	0	19	100.0
Any inflammable substances in the rooms	4	21.1	15	78.9
Use of hurricane lamps	2	10.5	17	89.5
Does the school have basic infrastructure	17	89.5	2	10.5

Data shows that all schools lacked lightening arrester, majority (78.9%) of schools did not have any inflammable substances in the rooms. The study further shows that (89.5%) of schools did not use hurricane lamps while the

same number of schools had basic infrastructure. The above findings indicated that though some schools had implemented the guidelines on availing fire exits, majority had no fire assembly points where people assemble for instructions during a disaster. Fire extinguishers were usually located inside the rooms thereby limiting their use in case of a fire disaster in the same room besides lacking a disaster response team that prepares on how to handle the disaster that has already struck.

The researcher also observed the evacuation maps and posters for warning /information. The observation is presented in Table 4.18.

Table 4.18 Observation of evacuation maps and posters for warning /information

Resources	Yes		No	
	F	%	F	%
Are there evacuation maps on every exit	1	5.3	18	94.7
Are the paths labeled to show direction	2	10.5	17	89.5
Are plants labeled by name and use	0	0	19	100.0
Are there posters for warning /information	9	47.4	10	52.6

Majority (94.7%) of schools lacked evacuation maps on every exit, while (89.5%)had paths that were not labeled to show direction. Data further shows that all schools (100.0%) plants were not labeled by name and use while majority (52.6%) of schools lacked posters for warning /information.

Observation of disaster guidelines resources is presented in Table 4.19.

Table 4.19 Observation of disaster guidelines resources

Resources	Yes		No	
	F	%	F	%
Is landscaping done	15	78.9	4	21.1
Is there a manned gate	18	94.7	1	5.3
Are doorways adequate for emergency	18	94.7	1	5.3
Is there a door at each end of the dorm	19	100.0	0	00.0
Are there waste baskets in the compound	15	78.9	4	21.1
Is the infrastructure friendly to special needs learners	6	31.6	13	68.4

Table 4.19 shows that majority 15(78.9%) of schools landscaping was done and they had waste baskets in the compound. Majority 18(94.7%) of schools gates were manned and the doorways were adequate for emergency. Data further shows that there was a door at each end of the dorm in the schools. Majority 13(68.4%) of schools infrastructure was not friendly to special needs learners. The findings above indicated that majority of the schools lacked disaster preparedness measures in that they lacked evacuation maps at the exit, labeled paths, or posters of warning that would guide those escaping from the disaster. It further indicates lack of disability friendliness which is against the requirements of the guidelines.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study, discusses the findings of the study and presents conclusions, recommendations and suggestions for further research.

5.3 Summary of the study

The purpose of the study was to investigate the governance factors influencing the implementation of Disaster Risk Reduction guidelines in public secondary schools in Meru South District, Kenya. The study was guided by four research objectives. Objective one sought to establish the extent to which involvement of stakeholders in decision making influences the implementation of Disaster Risk Reduction guidelines in Public Secondary Schools, research objective two sought to examine the extent to which sensitization of the community influences the implementation of disaster risk reduction guidelines in public secondary schools. Objective three sought to establish the extent to which availability of financial resources influence the implementation of DRR guidelines in Public Secondary Schools while research objective four sought to determine the extent to which monitoring of schools by government agencies influence the implementation of Disaster Risk Reduction guidelines in Meru South District. The study adopted a descriptive survey research design. The study targeted 20 public boarding secondary schools, and 20 boarding masters.

To what extent does involvement of stakeholders in decision making influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?

Findings on the extent to which involvement of stakeholders in decision making influences the implementation of disaster risk reduction guidelines in Public Secondary Schools indicated that the principals involved the stakeholders in decision making through parents meeting, students council meetings and class meetings as indicated by (100.0%) of the principals. The schools had suggestion boxes and class meetings. The findings further shows that there were different ways in which the stakeholders were involved in decision making on implementation of disaster risk reduction guidelines in public secondary schools. Findings further indicated that there were morning assemblies and code of rules and regulations in schools as indicated by all the principals.

It was further found out that there were various disaster management items in the schools but they lacked or had inadequate clearly stated evacuation procedures which could adversely affect the implementation of disaster risk reduction guidelines in public secondary schools.

To what extent does community sensitization influence the implementation of the DRR in Public Secondary Schools in Meru South District?

Findings on the extent to which sensitization of the community influences the implementation of disaster risk reduction guidelines in public secondary schools, findings revealed that majority (94.7%) of housemasters indicated that the teachers assessed the premises daily and that the students' leaders monitored the premises. The study further revealed that majority (78.9%) of house masters indicated that there was a checklist used for monitoring and the results of monitoring were shared with school management.

There was a roll call taken before students sleep as indicated by majority (57.9%) of house masters. (68.4%) of house masters indicated that Decker beds were not fitted with side grills. The study further revealed that majority (89.5%) of house masters indicated that there was a provision for solid waste disposal. The study further revealed that the schools put in place structures necessary for the implementation of disaster risk reduction. It was further indicated that Ministry of Education officers assessed the school. Data further revealed that majority (89.5%) of house masters indicated that there were emergency exit points in the dormitories while majority (73.7%) of house masters indicated that their schools lacked an incinerator where solid waste was burnt.

This implies inadequate sensitization of stakeholders on DRR in schools.

To what extent does availability of financial resources influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?

Findings on the extent to which availability of financial resources influences the implementation of DRR guidelines in Public Secondary Schools revealed that majority (98.5%) of principals indicated that they did not have occupation certificate for occupied buildings but they had a grills removed from windows. The study further revealed that schools had school registration certificate. Majority (78.9%) of principals had a site plan, fire extinguishers, and a copy of safety manual. However they did not have a disaster response committee.

The study further revealed that schools lacked rapid evacuation measures as indicated by majority (63.2%) of principals and also lacked evacuation maps as revealed by majority (89.5%) of principals. The schools also lacked a clear telephone tree. Majority (89.5%) of house masters indicated that they lacked labeled paths to show direction but they had enrolment based on bed capacity. The study further revealed that schools had hurricane lamps used in the dorms and some had contacts for fire brigade.

The study further revealed that some schools had a well-stocked first aid kit as indicated by majority (73.7%) of principals. Majority (84.2%) of schools had a whistle. Majority (63.2%) of principals indicated that some school had not purchased a flash torch, majority (73.7%) of principals indicated that some

schools had fire extinguishers. Findings further revealed that majority (94.7%) of schools lacked lightning arresters while majority (78.9%) of principals indicated that they did not have safety subcommittee in their schools. This implies that some schools either lacked adequate finances or did not budget appropriately in favour of disaster risk reduction.

To what extent does monitoring by government agents influence the implementation of DRR guidelines in Public Secondary Schools in Meru South District?

Findings on the extent to which monitoring of schools by government agencies influenced the implementation of disaster risk reduction guidelines, the study revealed that schools had inspection of the school by QASOs. Staff in the schools had not been trained in disaster management while schools did not have fire brigade personnel for talks and demonstrations

5.3 Conclusions

Based on the study findings, the study concluded that some principals involved the stakeholders in decision making through parents meeting, students council meetings and class meetings. Some schools had suggestion boxes and class meetings and that there were different ways in which the stakeholders were involved in decision making on implementation of disaster risk reduction guidelines in public secondary schools. The study further concluded that most schools had clean/boiled drinking water, a mechanism for detection of early signs of disaster but lacked clearly stated evacuation

procedures. The study further concluded that some schools' electrical appliances were regularly checked by an electrician. It was hence concluded that there were various disaster management items lacking in some schools which could adversely affect the implementation of disaster risk reduction guidelines in public secondary schools.

The study further concluded that some teachers assessed the premises daily and that the students' leaders monitored the premises. The study further concluded that there was a checklist used for monitoring and the results of monitoring were shared with school management in some schools. It was further concluded that some schools had a roll call taken before students slept and the decker beds were not fitted with side grills. The study in addition concluded there was a provision for solid waste disposal. It was further concluded that Ministry of Education officers assessed some school. This implies that some schools were neither monitored nor assessed by relevant government agencies for compliance and hence exposing the schools to disaster.

To what extent does availability of financial resources influence the implementation of DRR guidelines in public secondary schools?

On the extent to which availability of financial resources influences the implementation of DRR guidelines in Public Secondary Schools the study concluded that though most of the schools registration certificates from the

Ministry of Education, they did not have occupation certificates for occupied building , which is contrary to the guidelines .It was further concluded that the schools lacked rapid evacuation measures, evacuation maps, labeled paths to show direction but they had enrolment based on bed capacity Although most of the schools had fire extinguishers, they were not strategically located. The schools lacked lightening arresters and they did not have safety subcommittee in their schools. The study lastly concluded that the schools had inspection by QASOs but the principals lacked disaster management training for staff and fire brigade personnel talks and demonstrations.

This study, based on the above factors, concludes that inadequate financial resources or inappropriate budgetary allocation in favour of school safety impact negatively on implementation of the guidelines.

5.4 Recommendations

Based on the findings and conclusion made above, the study makes the following recommendations. The study recommends that:

- (i) Sensitization to be created through awareness through parents meeting students meetings, assemblies, rules and regulations, talks by fire brigade personnel and demonstrations.
- (ii) The school management to source funds from grants, appropriation in aid, volunteers, parents and other well-wishers and appropriately budget for the same in favour of school safety

- (iii) Stakeholders to be sensitized and involved in decision making in the way of disaster preparedness which either combats the disaster or minimizes its effects.
- (iv) Monitoring by government agencies to be carried out frequently to assess the level of compliance with the set guidelines and also to guide on sensitization programs.

5.5 Suggestions for further study

This researcher takes exception to the fact that the study was conducted in Meru-South District. The researcher therefore suggested that the study be conducted in a larger area, or in the whole of Kenya to determine factors influencing the implementation of Disaster Risk Reduction (DRR) guidelines in public secondary schools. Since the study was carried out in a rural setting, there is need to conduct a similar study in an urban informal settlement so as to compare the results.

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APPENDIX A

LETTER OF INTRODUCTION

Njogu Jane Wanjira
Department of Educ. Admin and
planning,
University of Nairobi
P.O Box 92,
Kikuyu
6thFebruary, 2014

The Principal

..... Secondary School

Dear Sir/Madam,

RE: PERMISSION TO UNDER TAKE RESEARCH IN YOUR SCHOOL

I am a master of Education student at the University of Nairobi carrying out a research study titled “governance factors influencing the implementation of DRR in public Secondary Schools in Meru South District-Kenya”. This is to request for your permission to collect data in your school. The identity of respondents will be kept strictly confidential and all information given will only be for the purpose of this study.

Thank you.

Yours faithfully,

.....

Jane Njogu

APPENDIX B

QUESTIONNAIRE FOR PRINCIPALS ON SCHOOL SAFETY

This questionnaire is designed to help gather information on the implementation of disaster risk reduction guidelines for public boarding secondary schools in Meru south District. Please read and respond to each question as honestly as possible by indicating with a tick the appropriate opinion. Your identity will be treated with at most confidentiality.

NB: Do not write your name on the Questionnaire

Use a tick (✓) on the space provided to indicate your answer

Disaster risk reduction guidelines

S/NO	Does the school have the following;-	yes	No
I.	A School registration certificate?		
II.	Occupation certificate for occupied buildings?		
III.	Grills removed from windows?		
IV.	The doors opening outwards?		
V.	A site plan in use?		
VI.	Fire extinguishers?		
VII.	A copy of the safety manual?		
VIII.	A disaster response committee?		
IX.	Rapid evacuation measures?		
X.	Evacuation maps?		
XI.	A clear telephone tree?		
XII.	Contacts for local authorities?		

2. Disaster prevention based on availability of financial resources

S/NO	Has the school purchased the following?	Yes	No
i.	A well-stocked first aid kit?		
ii.	An alarm system?		
iii.	A whistle?		
iv.	Fire blankets?		
v.	A flush torch?		
vi.	Fire extinguishers?		
vii.	Lightening arresters?		
viii.	Safety subcommittee?		
ix.	Inspection of the school by QASOs		
x.	Fire drills		
xi.	Disaster management training for staff		
xii.	Safety subcommittee meeting		
xiii.	Fire brigade personnel talks and demonstrations		

2. Involvement in decision making

s/no	Does the school have -;	Yes	No
i.	Parents meetings		
ii.	Students council meetings		
iii.	Suggestion box		
iv.	Class meetings		
v.	Morning assemblies		
vi.	Code of rules and regulations		

APPENDIX C

QUESTIONNAIRE FOR HOUSE MASTERS

This questionnaire is designed to help gather information on the implementation of disaster risk reduction guidelines for public boarding secondary schools in Meru South District. Please read and respond to each question as honestly as possible by indicating with a tick the appropriate opinion. Your identity will be treated with Utmost confidentiality.

NB: Do not write your name on the questionnaire

Use a tick (✓) on the space provided to indicate your answer

Disaster risk reduction

	Does the school have ;-	Yes	No
i.	Clean/boiled drinking water?		
ii.	A mechanism for detection of early signs?		
iii.	Clearly stated evacuation procedures?		
iv.	Electrical appliances regularly checked by electrician?		
v.	Are the paths labeled to show direction?		
vi.	Are hurricane lamps used in the dorms?		
vii.	Enrolment based on bed capacity		
Viii	Contacts for fire brigade?		
Ix	Is there a disaster crisis response team?		
X	Is there adequate space between beds?		
Xi	Are the dormitories locked during the day and keys secured?		

Xii	Are there functional fire extinguishers at each exit?		
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Monitoring

s/no		Yes	No
1)	Do teachers assess the premises daily?		
2)	Is there a checklist used for monitoring?		
3)	Do the students' leaders monitor?		
4)	Are the results of monitoring shared with school management?		
5)	Is a roll call taken before students sleep?		
6)	Are decker beds fitted with side grills?		
7)	Is there a provision for solid waste disposal?		
8)	Do the food handlers have medical certificates?		

APPENDIX D

OBSERVATION SCHEDULE

S/NO	ITEM	Yes	No
i.	Are rooms littered?		
ii.	Are fire extinguishers strategically located?		
iii.	Is there a fire assembly point?		
iv.	Are there fire exits in the rooms?		
v.	Are there lightening arresters?		
vi.	Any inflammable substances in the rooms?		
vii.	Use of hurricane lamps?		
viii.	Does the school have basic infrastructure?		
ix.	Are there evacuation maps on every exit?		
x.	Are the paths labeled to show direction?		
xi.	Are plants labeled by name and use?		
xii.	Are there posters for warning /information?		
xiii.	Is landscaping done?		
xiv.	Is there a manned gate?		
xv.	Are doorways adequate for emergency?		
xvi.	Is there a door at each end of the dorm?		
xvii.	Are there waste baskets in the compound?		
xviii.	Is the infrastructure friendly to special needs learners?		



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Ref. No.

Date:

12th June, 2014

NACOSTI/P/14/6474/2070

Jane Wanjira Njogu
University of Nairobi
P.O Box 30197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Governance factors influencing implementation of disaster risk reduction guidelines in Meru-South District, Kenya,"* I am pleased to inform you that you have been authorized to undertake research in **Meru County** for a period ending **31st July, 2014**.

You are advised to report to **the County Commissioner and the County Director of Education, Meru County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies** and **one soft copy in pdf** of the research report/thesis to our office.


SAID HUSSEIN
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Meru County.



National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified

