Disaster Planning and Preparedness in Libraries at the Kenya Methodist University (KEMU)

BY

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DECLARATION

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DEDICATION

To my Dad and Mum who provided extraordinary encouragement during my academic career. The financial support they accorded me will never be forgotten. Thank you Mum and Dad.

To my siblings G. Jemutai, B. Kiprop, L. Jepchumba and C. Cheptoo who provided morale support in one way or another during my scholarly work and to my nephew Brian Kipkoech (Brio) who I imitataed the phrase "aalright" from him. Thank you all.

ABSTRACT

In the current age, no institution or organization can be excluded from or is immune to a disaster. Library disaster planning and preparedness is a matter of basic security for libraries, their staff and their collections. However, disaster preparedness and planning has not been fully embraced in libraries today, Kenya Methodist University library being not an exemption. The aim of this study is to investigate disaster planning and preparedness at the Kenya Methodist University Library and make appropriate recommendations to strengthen disaster planning and preparedness. Specific objectives include: conducting a business process analysis of KeMU library; Ascertaining existing disaster planning and preparedness strategies at the KeMU library for information materials; Identifying physical facilities and practice in place for mitigation of disasters for information resources, property and people; Establishing capacity building levels for KeMU Library staff with regard to disaster planning and preparedness; and making appropriate recommendations to strengthen disaster planning and preparedness in the KeMU library. The study is informed by the Australian and New Zealand risk management model developed in 2004. The population sample constituted 32 members of staff to whom interviews were conducted. The main data collection method used was face-to-face interview. Qualitative approaches were used to analyze, present and interpret data and the analysis of data was done thematically. Among the key findings of the study are that: there is no clear disaster planning and preparedness policy at the KeMU library, the KeMU library staff are not adequately trained on all forms of disaster in a library; most library buildings in KeMU are not in conformation with the standards of a library; not all library staffs have undergone training in disaster management; the university lack proper disaster management on electronic information materials and KeMU libraries lacks consistent fire drills. The study provides several recommendations that would improve the current state of disaster planning and preparedness at the KeMU libraries and these include: The Library department needs to have policies and procedures in place for disaster management; the university should construct library specific buildings; the Library Department in conjunction with the Security and Operations Department should conduct fire drills consistently within the premises; the Library Department should conduct frequent training on disaster management to all library staff; the library should train staff on protection of electronic information materials on all causes of disasters and the library department should also ensure that staffs are trained to deal with acts of war and terrorism.

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ABBREVIATIONS

A/NZRMM - Australian and New Zealand Risk Management Model

AL - Assistant Librarian

BCP - Business continuity plan

CCTV - Closed Circuit Television

DPP - Disaster planning and preparedness

DRP - Disaster recovery plan

KeMU - Kenya Methodist University

LA - Library Assistant

RMP - Risk Management Process

SLA - Senior Library Assistant

UL - University Librarian

USCGM - United States Coast Guard Model

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.1 BACKGROUND OF KeMU

Kenya Methodist University (KeMU) is a university that initially started as a college in 1995 (KeMU Handbook, 2009). In 1995 Prof. Mutuma Mugambi was appointed a pioneer volunteer principal of the proposed university. The university has developed from a college to a chartered university. On 26th of June, 2006 His Excellency the president, Hon. Mwai Kibaki, awarded the charter to the Kenya Methodist University, that is now recognized to be at par with other institutions of higher learning. As a result of the e-learning facilities made available via internet and worldwide web, tertiary and adult education is becoming an internationally tradable community (Saint, 1999) and like any other institution of learning, KeMU has an established library with a collection of information materials. The rapid growth of the organization has compelled the organization to increase the library resources so as to keep pace with increased students' needs. The University's philosophy is to foster the intellectual, spiritual and physical development of the wholesome individual in order to recognize and utilize the available opportunities for enhancement of human development with the appropriate recognition and respect for other creations.

The vision of the University is to be a leading world class university in East Africa, committed to raising a new generation of transformational leaders, who are well grounded and committed to spiritual and ethical values.

The mission of the University is to contribute to the transformation of our society by providing high quality education that promotes excellence in scholarship, research and selfless service to the community'.

1.1.1 Programs offered

According to KeMU Academic Programmes Brochure, the university provides a variety of programmes designed to address the needs of the Nation and the rest of the World. The university offers Doctorate, Masters, undergraduate, Diploma, Pre-university, Bridging and Certificate programmes. These programs can be studied through full time, part-time, open and distance learning mode, school based and weekend intensive.

Post graduate programmes

Master of Business Administration (MBA)

Master of Arts in Counseling

Master of Education- Leadership &Education Management

Master of Science in Nursing Education

Undergraduate Programmes

Bachelor of Business Administration (BBA)

Bachelor of Business Information Technology (BBIT)

Bachelor of Science in Information Science

Bachelor of Science in Nursing

Bachelor of Education and Counseling (Arts)

Bachelor of Education and Counseling (Primary Option)

Diploma Programmes

Diploma in Economic Crime Management

Diploma in Project Management

Diploma in Business Information Technology

Diploma in Business Management

Diploma in Public Relations Management

Diploma in Human Resource Management

Diploma in Theology

Diploma in Pastoral Counseling

Pre University and Bridging Courses

Pre-University (For students wishing to upgrade their equivalent qualification to join diploma or Degree programmes)

Bridging courses in Mathematics, Physics, Biology, Chemistry and English

Certificate Programmes

Certificate in Theology

Certificate in Guidance and Counseling

Certificate in Computer Applications

Certificate courses in Professional Accountancy Management (KATC, KAME, CPA, and CPS)

1.1.2 University Core Values

According to KeMU Handbook (2009), the University is guided by a commitment to excellence embodied in a set of core values that define the university's culture as follows:

Professionalism **-** Maintain and promote professionalism in all functional areas of the university and in all our operations.

Leadership **-** promote strong and effective leadership at every level of the university. Setting high standards for character and integrity, we view accountability and responsibility as integral to human development.

Excellence **-** committed to the principle of excellence. Accordingly, we will ensure that all programs and activities are offered by competent, caring faculty and professional staff using best practice methods and techniques.

Creativity and innovation **-** committed to cultivating a culture of creativity and innovation among staff and students by utilizing the most modern technology in order to make them cope with a constantly changing world.

Moral integrity **-** upholds and sustains a culture of honesty, tolerance and mutual respect in dealing with her stakeholders.

Entrepreneurial culture **-** strive to inculcate in all graduates an industrial culture for their own self-sustenance and career development.

Respect for diversity **-** in the principle of unity in diversity because we believe every individual brings a unique contribution to our success. We will uphold a culture of

teamwork and mutual respect for individuals and differences that include age, culture, race, religion, disability and gender.

Competitiveness **-** continuously endeavor to be the University of Choice in order to attract and retain quality staff and students as well as financial support.

Corporate governance **-** establish transparent and accountable governance systems based on principles that underpin good decision making for the benefit of all our stakeholders.

Social responsibility **-** committed to fulfilling the University's mission to create, communicate and apply knowledge to a world shared by all people and held in trust for future generations.

KENYA METHODIST UNIVERSITY ORGANIZATIONAL STRUCTURE
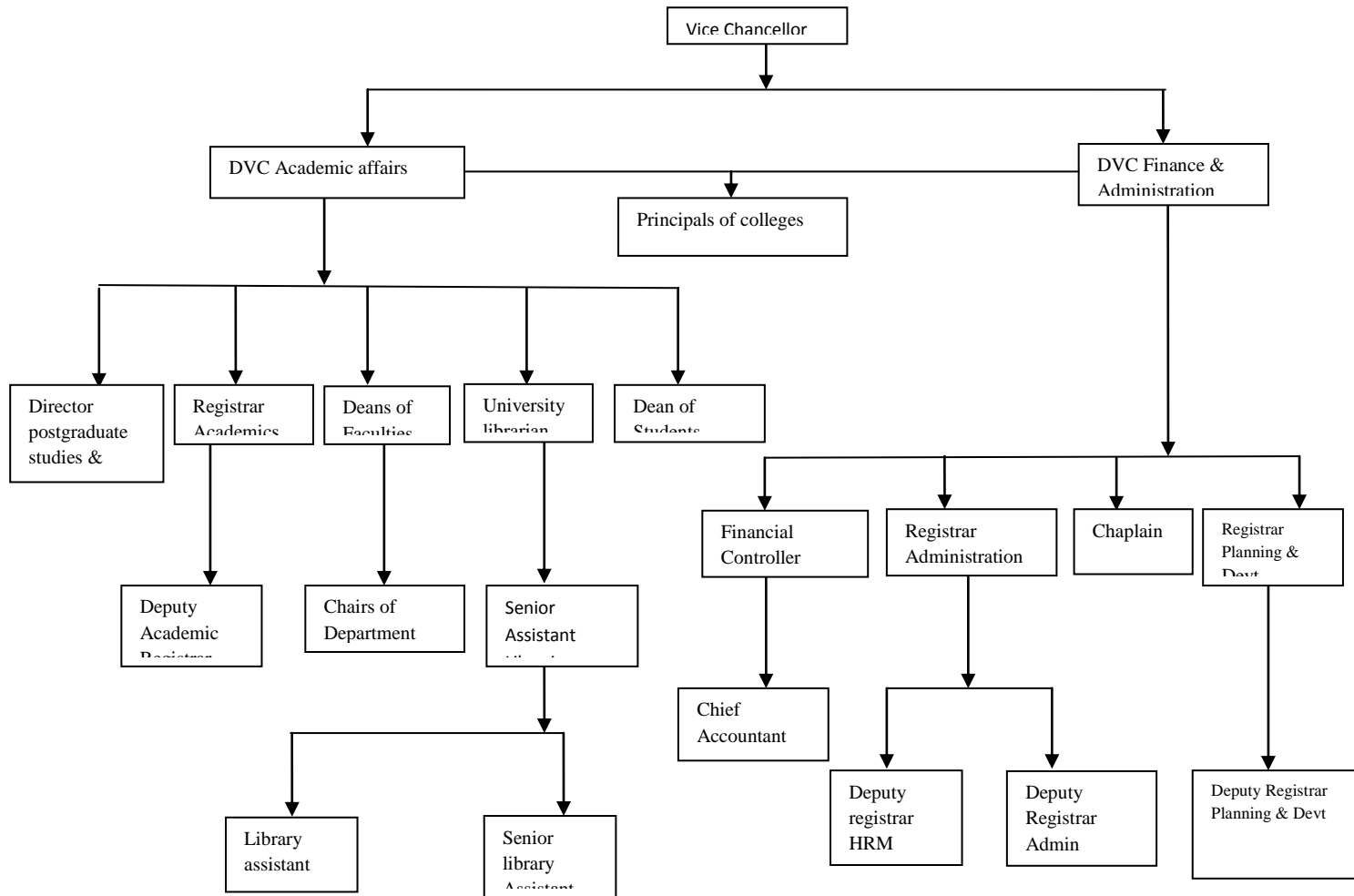
Source: Adapted from KeMU Handbook, 2009

1.1.3 KeMU Library

KeMU library has been created to fulfill the vision and the mission of the university namely: To "provide a setting for development of intellect skills, attitudes and values through quality teaching and learning to promote discovery and application of knowledge through research and to provide service and stewardship to others."

The vision of the university library is to be a dynamic, inclusive, competitive and indispensable centre of excellence in teaching, learning, research and service to humanity. The mission of the KeMU library is to provide students, academic staff and other users of the library access to an extensive range of current and relevant quality information resources in support of academic work of the university.

The objectives of KeMU Library are derived from the vision and mission of the university namely: to support the fulfillment of the curriculum by actively participating in the teaching and learning programs, to serve as a tool in assisting learning, teaching and research; thus making its role, that of a spatial pivot and intellectual symbol of the university. Specifically, the main activities of KeMU library are to offer: reading services, internet services, retrieval and dissemination of information materials, conservation and restoration of information materials.

KeMU's library policy is to maintain one central library to serve the main campus, the satellite campuses countrywide as well as the surrounding community. In this way, KeMU impacts in the immediate and the larger community in an effort to uplift the quality of life in the community through projects, programs and collaborative activities that are naturally beneficial. It is the library's plan to fully automate its library services. At that time all activities at the circulation desk will be automated from borrowing to returning of borrowed information materials. The overall status of the users and the information materials will also be controlled electronically.

1.2 OVERVIEW OF DISASTER MANAGEMENT

Libraries and information centers must be prepared for all disasters, natural and man-made, that may occur at their institution. The cost of not being prepared may be loss of life, loss of the cultural materials, and ultimately, the loss of the institution or business. Disasters are no longer viewed as extreme events created entirely by natural forces but as unresolved problems of development. It is now recognized that risks unmanaged or mismanaged for a long time, lead to the occurrence of disasters (Yodmani, 2001).

1.2.1 Disaster Management

Disaster management is the preparation for, response to, and recovery from disaster. While there are different understandings of disaster management, it is generally viewed as a cycle with the following five key phases: planning and preparedness phase, mitigation phase, response phase, recovery phase and evaluation phase (Herrmann, 2007). The challenge of disaster management is reducing the harm disasters cause to

society, the economy, and the lives of individuals and communities. The task requires managers to reduce certainty, to calculate and compare costs and benefits. Information technology provides capabilities that can help them formulate better decisions more quickly and also help keep better track of the myriad details involved in all phases of disaster management (Ramesh, 2007).

According to Eden and Matthews (1996), disaster management includes disaster control planning, but also encompasses broader issues such as risk assessment, training and finance, necessary for its successful implementation. They also acknowledge that it is easier to identify and acknowledge risks to libraries and collections than it is to accept the possibility of a disaster. It may also be easier to persuade funders to support the management of known risks, than to approve expenditure on something which might or might not happen.

1.2.2 Disaster planning

Reinhart (2001) defines a disaster plan as a systematic procedure that clearly detail what needs to be done, how, when, and by whom before and after the time an anticipated disastrous event occurs.

According to Eden and Matthews (1996) , during disaster planning, floor plans should be included which, as well as showing the more obvious details such as evacuation routes, assembly points, fire-risers and stop-cocks, identify the location of valuable documents and collections, each of which should be clearly marked according to its

salvage priority. This information will be vital during any rescue and recovery operations.

Disaster plans like any other plans have to be managed. The person(s) responsible for drawing up the disaster plan will need to liaise and negotiate with staff in other departments in their organization. They will need to liaise with representatives from the fire services and commercial organizations, such as binders and salvage and recovery experts, outside their organizations. Very often this will involve interaction with high-level personnel. The person(s) responsible for the plan must therefore have the authority, ability and confidence to make on-the-spot decisions at that level. If those responsible are not senior managers themselves, they will need support at that level. They must also be good organizers and good communicators, capable of developing good informal relationships with others, both in and outside their own organizations - particularly with those who might be able to expedite efforts to get information and help. (Matthews, 1996).

1.2.3 Disaster Preparedness

Reinhart (2001) defines disaster preparedness as the process of ensuring that an organization has complied with the preventive measures, is in a state of readiness to contain the effects of a forecasted disastrous event to minimize loss of life, injury, and damage to property, can provide rescue, relief, rehabilitation, and other services in the aftermath of the disaster, and has the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them.

UN-HABITAT (2007) defines disaster preparedness as activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings, and the temporary evacuation of people and property from threatened locations.

1.2.4 Disaster Recovery

Disaster recovery is the process, policies and procedures related to preparing for recovery or continuation of technology infrastructure critical to an organization after a natural or human-induced disaster.

A disaster recovery plan (DRP) - sometimes referred to as a business continuity plan (BCP) or business process contingency plan (BPCP) - describes how an organization is to deal with potential disasters. Just as a disaster is an event that makes the continuation of normal functions impossible, a disaster recovery plan consists of the precautions taken so that the effects of a disaster will be minimized and the organization will be able to either maintain or quickly resume mission-critical functions. Typically, disaster recovery planning involves an analysis of business processes and continuity needs; it may also include a significant focus on disaster prevention.

1.2.5 Disaster Planning and Preparedness (DPP)

The first step in creating a strategy or reviewing existing contingency plans to protect an organization from these and other events involves mustering the necessary business will

to undertake the challenges associated with the task. However, business observers contend that many organizations fail in this regard. The fact is that the majority of private-sector management is still reluctant to allocate the necessary time, staff, or funds to prepare and plan for the possibility of a disaster that may put them out of business. Myers (1993) agrees that this tendency to give short shrift to disaster planning is a common one, observing that when the economic climate is favorable, contingency planning is last on the list of things to do, when profits are down, contingency planning is the first item to be cut from the budget.

The process of creating a disaster planning, preparedness and recovery strategies is, in reality, the result of determining the organization's goals and objectives for business continuation. With this in mind, organizations should make an extra effort to solicit the opinions of all functional areas when putting together a disaster planning, preparedness and recovery plan. Facility management areas may be most knowledgeable when it comes to the vulnerabilities of computer systems and office areas but other areas can often provide helpful information on the business that most need protection or fallback plans so that the business can continue to operate in the case of a disaster (Levitt, 1997).

Mansdorf (2000) states that emergency planning is essential for all organizations. This applies whether an organization is a major manufacturer using large quantities of potentially hazardous materials or one that only employs office workers. This is because even those organizations that have no potentially hazardous materials, processes or wastes need a plan for fire, severe weather and other events requiring evacuation.

The planning and preparedness phase is designed to structure the disaster response prior to the occurrence of a disaster. It is a state of readiness to respond to a disaster or other emergency situation and involves evaluating the organization's potential disaster risks, vulnerabilities, and the likelihood for a disaster to occur.

Depending on the disaster, there are some incidents that may present more risk and challenges than others for organizations. For example, a small house fire may present minimal risk for a community if they have the resources to adequately respond to the needs of the individuals involved. A large structural fire, such as an office building with multiple people killed or suffering significant burn injuries, may present significant challenges for both the organization and the community at large, no matter how large the organization or how many resources they have at hand. Organizations systems must assess the risk of such scenarios above and plan accordingly (Herrmann, 2007).

The planning and preparedness phase also assesses the organizations systems' infrastructure that is availability of backup communications, transportation options and economic viability, and its capability to respond to the potential risks and vulnerabilities. It is important to note, however, that having the best plan or the most experienced team will not always guarantee a successful disaster response. There are some disasters whose magnitude and/or unique characteristics will stress even the most prepared system or team. In these cases, individual and system flexibility is imperative. Developing a plan and response team that is flexible and able to adapt to whatever occurs is extremely important. In many cases, peoples' lives will depend on it. Consider

the scenario where an entire library is rendered inoperable as a result of a fire. A plan and response team that had only considered the provision of services from their usual site will quickly become overwhelmed with how to respond when their site suddenly does not exist (Stephen, 2007).

1.3 STATEMENT OF THE PROBLEM

Lack of disaster preparedness in university libraries in Kenya can disrupt the functioning of universities greatly since universities cannot do without a library. It may not be so easy to stop disaster progression in a library and quantify it without prior preparedness. Libraries hold books, equipment and other reading materials which are greatly combustible. Librarians should therefore be well prepared for disasters which may range from fire, poor storage conditions, theft and floods to book deterioration among other things (Perry & Quaranteli, 2005).

In the current age, no institution or organization can be excluded from or is immune to a disaster. Library disaster planning and preparedness is a matter of basic security for libraries and archives, their staff and their collections (UNESCO, 2005). However, disaster preparedness and planning has not been fully embraced in libraries today, Kenya Methodist University library being not an exemption. There has never been any training on disaster preparedness and planning in KeMU hence there is no readiness by staff or students to respond to disaster.

Kenya Methodist University libraries lacks proper backup systems in an offsite location to enable them store information in a more secure place, the system is always within the library environs and hence in case of any tragic disaster like fire, the system will be of no help. The design of the building in which the libraries are setup are wanting since they were not meant to house the libraries initially apart from Meru campus and hence fire extinguishers, fire exits, window grills and horse rills are all not positioned well to come in handy in case of a disaster at the satellite campuses.

Moreover, the institution flatly lacks known contacts to emergency medical services, public health facilities, for instance, to hospitals and fire services to be communicated to in the event of a disaster. To add on if the worse came to the worst, its communication to state and local government agencies, for example, law enforcement would be impromptu. The number of disasters, the people affected by them, and the economic costs associated with them has been steadily increasing over time hence institutions needs to plan and prepare for any disaster.

Disaster planning and preparedness are important aspects of the universities library because they reduce the vulnerability to the consequences of disasters. The principal goal of disaster planning and preparedness is to reduce its occurrence and impact. Such preparedness will allow the university library to forge ahead in the face of disaster without interfering with the core functions of the university.

1.4 AIM OF THE STUDY

The aim of this study was to investigate disaster planning and preparedness in libraries at the Kenya Methodist University and make appropriate recommendations to improve disaster preparedness programmes.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

1) Conduct a business process analysis of the KeMU library.

2) Ascertain existing disaster planning and preparedness strategies at the KeMU library for both paper and electronic information materials.

3) Identify physical facilities and practice in place for mitigation of disasters for information resources, property and people.

4) Establish capacity building levels for KeMU Libraries staff with regard to disaster planning and preparedness.

5) Establish problems that may hinder disaster planning and preparedness in the libraries.

6) Make appropriate recommendations to strengthen disaster planning and preparedness in the KeMU libraries.

1.6 RESEARCH QUESTIONS

This research was guided by the following questions:-

1) What activities are conducted in KeMU Library?

2) What disaster planning and preparedness strategies are in place in KeMU library for information materials?

3) How adequate are the physical facilities and equipment for mitigation of disasters at the KeMU library?

4) How well are KeMU library staff prepared in disaster planning, preparedness and recovery?

5) What are problems that may hinder disaster planning and preparedness in the libraries?

6) What should be done to improve disaster planning and preparedness in KeMU libraries

1.7 ASSUMPTIONS OF THE STUDY

The study was based on the following assumptions:

1) Disaster planning and preparedness are important component of disaster management.

2) Inadequate disaster planning and preparedness increases the risk level in libraries for information materials, people and property.

3) KeMU libraries are inadequately prepared for disasters.

1.8 SIGNIFICANCE OF THE STUDY

The study will be significant to KeMU library and other libraries in a number of ways:

- It will raise awareness on level of disaster planning and preparedness in KeMU libraries.

- The recommendations will improve disaster planning and preparedness in KeMU libraries.

- It will suggest areas for further studies in disaster management in libraries in an attempt to extend the frontier of knowledge.

1.9 SCOPE AND LIMITATIONS OF THE STUDY

1.9.1   Scope of the Study

The study was limited to KeMU libraries in all campuses: Meru, Nairobi, Mombasa, Nyeri and Nakuru. The study sample will be library staff and KeMU's non-library management staff, namely, security and operations staff. As a result the findings cannot be generalized.

1.9.2   Limitation of the Study

The anticipated limitation of this study was on literature review on disaster planning, preparedness and recovery at the KeMU library since no study has been conducted on the KeMU libraries. This being the case, much of the literature reviewed was based on other libraries.

1.10 DEFINITION OF TERMS

Disaster

According to Quarentelly (1985) disaster is defined as a crisis situation causing wide spread damage which far exceeds our ability to recover. Thus, by definition, there cannot be a perfect ideal system that prevents damage, because then it would not be a disaster.

According to Eden and Mathew (1996) disaster is any incident which threatens human safety and or damages, or threatens to damage, a library's buildings, collections (or item(s) therein), equipment and systems.

Disaster Planning

A disaster recovery plan (DRP) - sometimes referred to as a business continuity plan (BCP) or business process contingency plan (BPCP) - describes how an organization is to deal with potential disasters. Just as a disaster is an event that makes the continuation of normal functions impossible, a disaster recovery plan consists of the precautions taken so that the effects of a disaster will be minimized.

Disaster control planning

According to Eden and Mathew (1996) Disaster control planning is concerned with the formulation of a written plan which gives details of preventive and preparatory measures intended to reduce potential risks, and which also indicates reactive and recovery procedures to be taken in the event of a disaster in order to minimize its effect.

Disaster Preparedness

Process of ensuring that an organization has complied with the preventive measures, is in a state of readiness to contain the effects of a forecasted disastrous event to minimize loss of life, injury, and damage to property, can provide rescue, relief, rehabilitation, and other services in the aftermath of the disaster, and has the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them. Preparedness for the first and immediate response is called emergency preparedness.

Disaster Management

Disaster management is the discipline of dealing with and avoiding risks. It is a discipline that involves preparing for disaster before it occurs, disaster response for example emergency evacuation, quarantine and mass decontamination as well as supporting, and rebuilding society after natural or human-made disasters have occurred.

Natural Disaster

A serious disruption to human systems triggered or industrial hazard causing human, material, economic or environmental losses that exceed the ability of those affected to cope.

Natural Hazards

Natural processes or phenomena occurring in the biosphere that may constitute a damaging event.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews the existing literature on disaster planning and preparedness in libraries. It covers: theoretical framework, disaster management, disaster planning, disaster preparedness', libraries and library management.

Literature review is an account of what has been published on a topic by accredited scholars and researchers (Dellinger, 2005; Dellinger & Leech, 2007; Zina, 2004; Kothari, 2004; Mugenda & Mugenda, 2004). It is the review of all relevant literature materials in the field of study. These literature sources could be books, newspapers, journal articles, audio-visual materials or even primary sources through interviews.

Literature review is therefore a critical account designed to convince a particular audience about what is published (and possibly also unpublished) theory, research, practice or policy texts indicate is and what is not known about one or more questions framed by the reviewer.

According to Taylor (2008) the main purpose of literature review is to convey to the reader what knowledge or ideas have been established on a topic, and what their strengths and weaknesses are.

Besides expanding the researcher's knowledge about the topic of study, Taylor (2008) and Kothari (2004) further observe that writing a literature review allows one gain and demonstrate skills in information seeking (the ability to scan the literature efficiently, using manual or computerized methods, to identify a set of useful articles and books) and critical appraisal (the ability to apply principles of analysis to identify unbiased and valid studies).

2.2   THEORETICAL FRAMEWORK

Mugenda and Mugenda (2003) define theory as a set of concepts or constructs and the interrelations that are assumed to exist among those concepts. Another meaning of theory relates to the entire body of knowledge available in the given discipline.

A model allows complex systems to be understood and their behavior predicted within the scope of the model, but may give incorrect descriptions and predictions for situations outside the realm of their intended use.

For this study two theories were analyzed and these included: Coast guard risk management model and The Australian and New Zealand Risk management model. The latter was preferred for this study.

2.2.1 Coast Guard Risk Management Model

The Coast Guard Risk Management model was developed by The United States Coast Guard (USCG) a branch of the United States Armed Forces that is maritime law enforcement agency (with jurisdiction both domestically and in international waters) and a federal regulatory agency, in 2006. The model presents a 6-step risk management model for organizations as shown in figure 2.2.1 below.
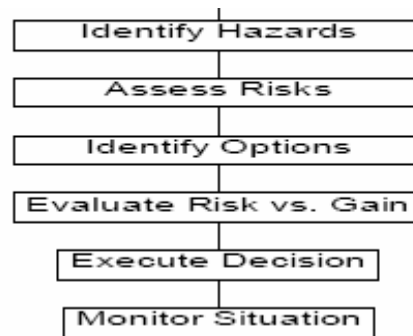
Fig.2.2.1: Coast Guard's Risk Management Model

- Step 1: Identify the Hazard

A hazard is defined as any real or potential condition that can cause degradation, injury, illness, death or damage to or loss of equipment or property. Experience, common sense, and specific analytical tools help identify risks.

- Step 2: Assess the Risk

The assessment step is the application of quantitative and qualitative measures to determine the level of risk associated with specific hazards. This process defines the

probability and severity of an accident that could result from the hazards based upon the exposure of humans or assets to the hazards.

- Step 3: Identify Options (Analyze Risk Control Measures)

Investigate specific strategies and tools that reduce, mitigate, or eliminate the risk. All risks have three components: probability of occurrence, severity of the hazard, and the exposure of people and equipment to the risk. Effective control measures reduce or eliminate at least one of these.

The analysis must take into account the overall costs and benefits of remedial actions, providing alternative choices if possible.

- Step 4: Evaluate Risk vs. Gains (Make Control Decisions)

Identify the appropriate decision-maker. That decision-maker must choose the best control or combination of controls, based on the analysis of step 3.

- Step 5: Execute Decision (Implement Risk Controls)

Management must formulate a plan for applying the controls that have been selected and then provide the time, materials and personnel needed to put these measures in place.

- Step 6: Monitor Situation

Once controls are in place, the process must be periodically reevaluated to ensure their effectiveness. Workers and managers at every level must fulfill their respective roles to assure that the controls are maintained over time. The risk management process continues throughout the life cycle of the system, mission or activity.

The coast guard risk management model has some limitations in that it does not take into consideration an information center; it is basically a strategy employed by the United States Armed Forces to fight terrorists.

2.2.2 The Australian and New Zealand Risk Management Model (A/NZRMM)

The Australian and New Zealand Risk Management model was developed by Australia and New Zealand in 2004. The model deals with risk management in organizations for Information system. According to Emergency Management Australia, Emergency risk management is a systematic process that produces a range of measures that contribute to the well being of communities and the environment while the New Zealand Risk management is the process of considering the social, economic and political factors involved in risk analysis; determining the acceptability of damage and/or disruption that could result from an event; and then deciding what actions should be taken to minimize likely damage or disruption. It presents a 7-step risk management model for organizations as shown in figure 2.2.4. The SA/SNZ (1999), Davidson & Lambert (2004) put forward the 7-step risk management model as explained below.

Phase 1: Context Definition

Establishing the context involves defining the strategic context, the organisational context and the risk management context in which the risk management process (RMP) will take place. Criteria against which risks will be evaluated and the structure of the analysis should also be defined at this stage.

The strategic context provides a description of the organisation; where it sits within the industry, who controls it, who its customers are, how big it is, its employee profile and the major strengths, weaknesses, threats and opportunities that face the organisation.

The organisational context refers to "the capabilities, goals and objectives of the organisation and the strategies that are in place to achieve them". The organisational context in which the RMP is to be implemented must be defined and understood so that the RMP can be designed to complement, or at least not conflict with, organisational goals and objectives.

The risk management context refers to establishing the "goals, objectives, strategies, scope and parameters of the activity, or part of the organisation to which the RMP is being applied"

Determining the risk management context requires the definition of a "risk unit(s)" or part of the organisation or that function of the organisation to which the RMP is to be applied. The risk units of an organisation might include property management or information systems. Several RMPs might exist in a single organisation making up the over-all RMP of the entire organisation.

Phase 2: identify risk

The aim of the risk identification stage is to generate a comprehensive list of all risks facing the organisational unit regardless of whether they are or are not under the control of the organisation. It is essential that a well-structured process be used, so that

all significant risks are identified; if they are not identified at this stage they are excluded from analysis.

How can one be confident that all risks have been identified? Certainly, something more than intuition and brainstorming is required. A properly applied structured analysis technique will ensures all risks are identified. This involves separating the activity into a set of elements, which provides a logical framework for identification and analysis. In this process one need to identify what, why and how things can arise as the basis of further analysis.

Phase 3: Analyse risk

In order to assess the significance of a potential risk each risk must be assigned a value. For each potential risk, an estimate must be made of the resulting consequences or loss should the threat be realized and an estimate of the likelihood or frequency of the vulnerability being exploited. Estimates can be made based on historical evidence and from the judgments of personnel with knowledge of the relevant threats and vulnerabilities. The estimates can be quantitative, semi-quantitative or qualitative.

This determines the existing controls and analyzes risk in terms of likelihood and consequence in the context of those controls. The analysis should consider: how likely is the event to happen and what are the potential consequences and their magnitude. Consider these elements to produce an estimate level of risk.

Phase 4: Evaluate risks

This stage of the RMP compares the level of risk found during the analysis process with the risk evaluation criteria established in the "Establish the Context" stage discussed in phase 1. An organisation using qualitative analysis may establish that "extreme" and "high" risks require immediate attention, "low" risks are acceptable and "moderate" risks will be considered on a case by case basis to determine their level of acceptability.

This phase compares estimated levels of risk against the pre-established criteria. Risks are the ranked to identify management priorities. If the levels of risk established are low, then risks may fall into an acceptable category and treatment may not be required.

Phase 5: Treat risks

This phase investigates specific strategies and tools that reduce, mitigate, or eliminate the risks. All risks have three components: probability of occurrence, severity of the hazard, and the exposure of people and equipment to the risk. Effective control measures reduce or eliminate at least one of these. When corrections are made in time then the operations within the organization are returned to normal state and while the corrections are ignored then this invites disaster.

There are three steps in treating risks:

Step1. Identify treatment options;

Step2. Evaluate and select treatment options;

Step3. Prepare and implement treatment plans.

Step 1: Identify Treatment Options

Five treatment options are available:

1. Avoid the risk;

    Risk avoidance involves eliminating the activities that generated the risk. For example, being connected to the Internet poses a risk that an attacker could access sensitive files. This risk can be avoided by simply disconnecting from the Internet. Care must be taken however to ensure that the risk avoidance measures do not conflict with the strategic objectives of the organisation identified in Phase 1

2. Reduce the likelihood of the occurrence

    To reduce the likelihood of an occurrence, the vulnerabilities can be treated so that the expected frequency of an attack falls to a level that generates an acceptable risk level. For instance, the risk of an outside party tapping into the library's data could be reduced through the use of a firewall to restrict access, theft can be reduced by hiring a security officer to check on members leaving the library to ensure that all library materials leaving have been lawfully discharged.

3. Reduce the consequences

    Consequences can be reduced in many ways such as daily backups of all files, or minimizing the number of files stored on the computer that is connected to the Internet.

4. Transfer the risk

   Another way of reducing the loss or consequence of an attack is by transferring part or all of the loss to a third party through insurance.

5. Retain the risk

   Retaining the risk is another option. Individual risk profiles differ; therefore, some organizations will retain more risks than others. After treating risks to reduce them there will be residual risks or new risks arising from treatment. It is important that users revisit their original criteria to ensure they are comfortable with the levels in terms of both costs and benefits.

Step 2 Evaluate and Select Treatment Options

   The risk treatment options must be assessed in terms of the effect they will have on the organisation and the cost of implementing them. The benefits obtained from implementing the treatment options should out-weigh the costs (both monetary and non-monetary). Identifying appropriate treatment options requires both business and technical Information Systems skills and knowledge. Treatment options can be aimed at decreasing the loss should an attack occur.

Step 3 Prepare and Implement Treatment Plans

   The risk treatment plan documents the controls that have been chosen to treat the risks. It also states who has responsibility for implementing the plan, what resources are to be utilized, budget allocation and the timetable for implementation. The plan will also include details of how compliance with the treatment plan will be reviewed

Phase 6: Monitoring and Review

Monitoring and review is an ongoing process that is part of every stage of the complete RMP. As well as monitoring the effectiveness of the risk treatment plan and how it was implemented, risks and their control measures need to be continually monitored, as few risks remain static. Circumstances can change which affect the likelihood and consequences of an event, as well as the suitability of treatment options. By regularly repeating the risk management cycle it ensures that the management of risks remains relevant.

Phase 7: Communication and Consultations

Throughout the RMP various stakeholders should be consulted and kept informed of findings and proposed actions. The stakeholders are those who can be affected by a decision or activity and include employees, students and management.

Australian/ New Zealand Risk Management Model
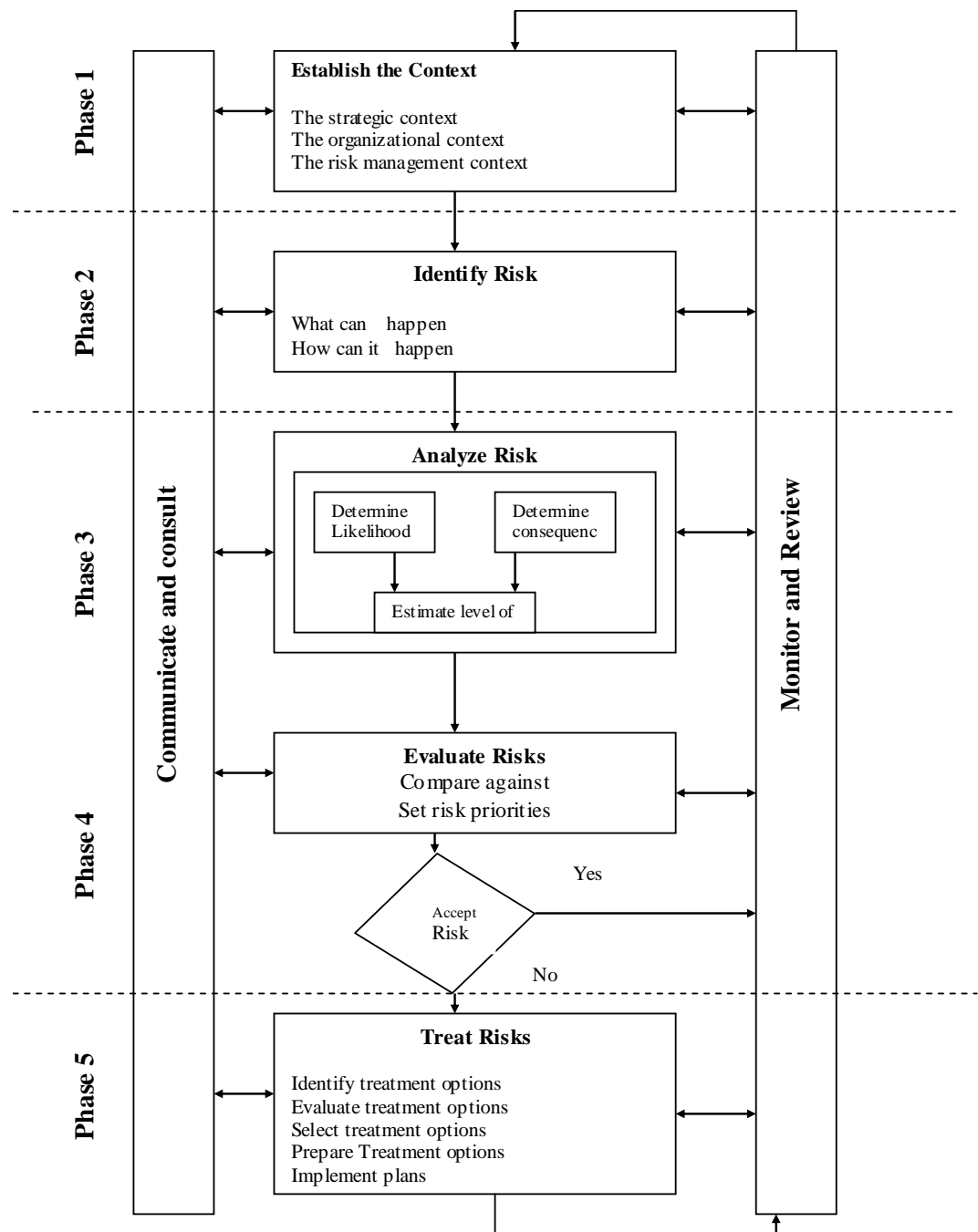
Figure 2.2.2. Australian/New Zealand Risk Management Model

2.2.2.1 Relevance of the Model to the Study

The A/NZRMM was developed as a disaster mitigation model, wherein it refers to disasters as risks. The model presents a straightforward step-by-step approach to disaster management, including disaster planning, preparedness and recovery.

Within the context of this study, the model provides a more professional and proactive approach to disaster planning and preparedness. The philosophy of this model is that comprehensive disaster planning and preparedness stems from adequate disaster prevention.

The Australia / New Zealand Standard model provides a generic guide for the establishment and implementation of a risk management process. The model can be applied to a wide range of organizations KeMU included for a number of applications, including risk management of an information system. The risk management standard provides a logical and systematic method of establishing the context, identifying, analyzing, evaluating, treating, monitoring and communicating risks associated with any activity, function or process in a way that will enable organizations to minimize losses and maximize opportunities.

The A/NZRMM establishes the context in which the risk management process will take place, it fits in KeMU simply because it tends to provide a description where it is situated in terms of geographical location, its organizational structure, the duties and

functions it provides to its users, the capacity in terms of the number of branches, the employees it has and its strengths, weaknesses, threats and opportunities.

The organizational context in the first phase in the A/NZRMM model is of relevant to the study in that it gives the capabilities, goals and objectives of the organization and the strategies that are in place to achieve them. The organizational context in which the RMP is implemented in KeMU library is done so that it can complement the goals and objectives of the entire institution. The model further puts into consideration a part of the organization which in this case is the library, its goals, objectives, strategies, scope and parameters of the activity of the library to which the RMP will be applied.

The model determines a definition of a "risk unit" (the library) in the organization to which RMP is to be applied. The second phase which is risk identification in the model provides relevancy to the study in that it enables the library to generate a comprehensive list of all risks facing it regardless of whether they are or are not under the control of KeMU. It enables the library to develop a well-structured process be used, so that all significant risks are identified.

Brainstorming and intuition is required in identifying the risks that might take place in the library since the staff and the administrators are in a position to identify them. In this phase the person's in-charge can identify what, why and how things can arise in the institution.

Phase three analyses risk and this will enable the library to analyse the potential risks that may occur and in each risk an estimate of resulting consequences are made. Estimates are made based on historical evidence and from the judgments of the persons with knowledge of the relevant threats and vulnerabilities. It determines the existing controls and analyzes risk in terms of likelihood and consequences in the context of those controls. How likely is the event to happen and the potential consequences and their magnitude.

The modern approach to disaster risk management now emphasizes the consequences of hazard impact on communities and how best to minimize those consequences. It demands an holistic approach. It is no longer appropriate to simply focus on the hazard phenomena, its historical impact and probability of its recurrence. It is essential to also develop a comprehensive understanding of the community that is exposed to the hazard (its people, buildings, infrastructure, economic resources and natural environment) and the degree to which those elements are vulnerable to various hazard impacts.

Disaster planning and preparedness in libraries must focus on information materials, property and people. Its requirement for assessment and evaluation of risk situations and monitoring of risks indicates that disaster management is a complex activity that requires ongoing management.

With the adoption of this approach in the libraries, disaster planning and preparedness will be managed in a more proactive manner rather than a reactive approach as is the case in most cases in the developing world like Kenya.

It is widely acknowledged that it is no longer appropriate to simply focus on the physical consequences of disaster; it is essential to consider the triple bottom line of disasters - the economic, social and environmental consequences.

2.3   UNIVERSITY LIBRARIES

Kumar (1996) states that a University Library is part of a University setup whereby it exists to serve the objectives of its parent organization.   The University Library programmes must support or facilitate the University's total programme. A University Library should aim to advance the functions of its University.   It should reflect the character of the University.

The teaching function is considered to be almost the only responsibility of universities which seem to forget that a university ceases to be a true seat of learning unless its members are engaged in research. In the modern age, no university can afford to rest content with the mere dissemination of knowledge. It must advance knowledge through continuous process of research and assume responsibility for initiating the coming generations in research methods and technique.

The library plays a vital role in assisting the university to fulfil its basic functions. By collecting, preserving and making available for use, books, manuscripts, journals and related materials, a rationally equipped university library is indispensable for the transmission and advancement of knowledge. There can be no teaching and no research worth the name without well stocked libraries. Students have to use them to argument their knowledge, teachers to enrich their instructions and research workers to persue their investigations (Rahim, 1960).

Because of the diversity of materials in their collections the main values of librarians is intellectual freedom, free access to information and equity in access, libraries in general promote values such as democracy and diversity. Even though one of the main goals of university libraries is to support education and research, they cannot abandon their role as a place where different social policies, theories and ideologies meet. They are, however, a space to study different art and cultural schools and, in general, to analyze the trends of daily life in a society (Rodriguez and Amaral, 2002).

Functions of a University Library

- Teaching
- Research
- Publication
- Extension programmes
- Administration and Management functions

2.4   DISASTER MANAGEMENT

UN-HABITAT (2007) defines disaster as a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses that exceeds the ability of the affected community or society to cope using its own resources. It is a function of risk process. It results from a combination of hazards, human vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.

According to Quarentelly (1985) 'disaster' is defined as a crisis situation causing wide spread damage which far exceeds our ability to recover. Thus, by definition, there cannot be a perfect ideal system that prevents damage, because then it would not be a disaster. It has to suffocate our ability to recover. Only then it can be called as 'disaster'. Disasters are not totally discrete events. Their possibility of occurrence, time, place and severity of the strike can be reasonably and in some cases, accurately predicted by technological and scientific advances. It has been established there is a definite pattern in their occurrences and hence we can to some extent reduce the impact of damage though we cannot reduce the extent of damage itself. This demands the study of disaster management in methodical and orderly approach.

A disaster is the tragedy of a natural or human-made hazard that negatively affects society or environment. Though it is almost impossible to fully recoup the damage caused by the disasters, it is possible to minimize the potential risks by developing early warning strategies, prepare and implement developmental plans to provide resilience to

such disasters, mobilize resources including communication and tele-medicinal services, and to help in rehabilitation and post-disaster reconstruction.

Technological disaster is defined by ILO (1988) as an occurrence such as a major emission, fire or explosion resulting from uncontrolled developments in the course of an industrial activity, leading to a serious danger to man, immediate or delayed, inside or outside the establishment, and to the environment, and involving one or more dangerous substances.

2.4.1 Disaster stages

Richardson (1994) and World Health Organization (WHO, 2003) account that disaster consist of three stages: before, during, and after disaster stages. The figure below shows the disaster stages.
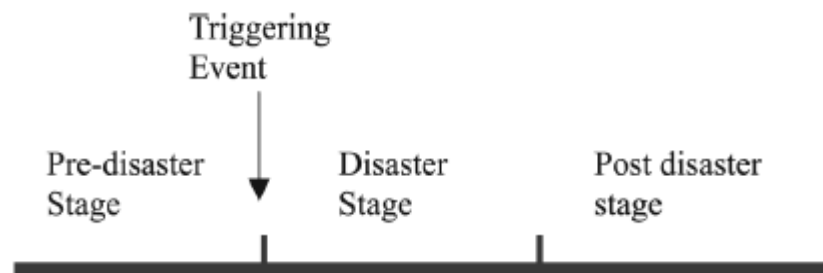
Fig. 2.4.1 Disaster Stages
Source: Adapted from WHO (2003)

2.4.1.1 Pre-disaster stage

Turner (1976) and Turner and Pedgeon (1997) described the man-made disaster precondition phase as an incubation period. Turner and Pedgeon (1997) defined the incubation period as the accumulation of an unnoticed set of events, which are at odds with the accepted beliefs about hazards and the norms for their avoidance. Hood and Jackson (1992) pointed out that the incubation period seems to be a key element in organizing the disaster, for the following reasons: enough time for crucial signals to be misread, evidence ignored or misinterpreted; enough time for organizations to work themselves into the incompetence trap-learn to do the wrong thing better; and enough time for all the minor events to interact and accumulate to produce major system failure. Grabowski and Roberts (1997) pointed out that long incubation periods can mask danger signals important in risk analysis in large-scale systems. Long incubation periods can mean that latent failures can exist unnoticed in systems for long period of time, thus reducing effective windows of opportunity in which intervention and risk mitigation measures might be introduced.

Triggering event

When an unsafe acts such as an error, mistake, violation of rules or procedures occur then the event could be triggered. Richardson (1994) pointed out that the triggering event is assumed to be that one action after which a disaster is unavoidable.

2.4.1.2 Disaster stage

This is the occurrence of a tragedy of a natural or human-made hazard that negatively affects society or environment when unsafe acts such as errors, mistakes, violations of rules or procedures are triggered. Philips (2009) acknowledges that thirty to forty years ago, the yearly fruits of financialization in the United states of America (USA)- the first credit cards, retirement accounts, money market funds and ATM Machines- struck most Americans as a convenient and boon. The savings and loan implosion and junk bonds of the 1980s switched on some yellow warning lights, and the technical bubble and market mania of the nineties flashed some red ones. But neither Wall Street nor Washington stopped or even slowed down.

2.4.1.3 Post disaster stage

 Post-disaster stage is the immediate stage following the disaster stage. it is the activity that returns infrastructural systems to minimum operating standards and guides long-term efforts designed to return life to normal or improved levels after a disaster. This is a very overwhelming stage of crisis management because it requires personnel and community motivation. It is achieved through; damage assessment, debris removal, and disaster assistance centers.

2.5   NATURAL DISASTERS

Global report on human settlements (2007) defines natural disaster as a serious disruption to human systems triggered by a natural hazard causing human, material, economic or environmental losses that exceeds the ability of those affected to cope. It

further defines natural hazards as natural processes or phenomena occurring in the biosphere that may constitute a damaging event. They can be classified by origin, and they can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

Examples of natural disasters are:

- Rain and wind storms,

- Floods,

- Earthquakes,

- Volcanic eruptions,

- Landslides and

- Biological agents such as: Micro organisms, insects or vermin infestations.

2.6   MAN-MADE DISASTERS

Global report on human settlements (2007) defines man-made disaster as a serious disruption to human systems triggered by a technological or industrial hazard causing human, material, economic or environmental losses that exceeds the ability of those affected to cope.

Examples of man-made disasters are:

- Fires,

- Explosions,

- Acts of war and terrorisms,

- Power failures,

- Liquid chemical spills,

- Building deficiencies such as structure, design,

- Environment and maintenance,

- Water; broken pipes, leaking roofs, blocked drains and fire extinguishers.

- Invasion of computer viruses

Man-made disasters cost the most in terms of human suffering, loss of life and long-term damage to a country's economy and productive capacity. The last decade has seen a marked increase in what are known as "complex emergencies" - complex because war and internal conflict lead to the breakdown and collapse of social, political and economic structures. Sometimes these emergencies are accompanied by natural disasters, which compound their complexity.

2.7   DISASTER MANAGEMENT IN LIBRARIES

Disaster is any incident which threatens human safety and damages, or threatens to damage or destroy, a library's buildings, collections, contents, facilities or services. (Matthews and Eden 1996).

Disasters can result from a range of causes, man-made and natural, including: arson, burst pipe, electrical fault, leaking roof, poor maintenance, earthquake, hurricane, flooding, terrorism, war, volcanic eruption, Landslides and biological agents. They

vary in scale and impact. Some may cause minor inconvenience, others can have enormous consequences for the library and its parent organisation, with catastrophic damage to stock, equipment, buildings and disruption to services, with considerable financial implications. If the incident is major and/or region wide and life threatening, emergency services will give priority to human safety and re-establishing the local infrastructure (Smith and Knowles 2006).

2.7.1 Natural Causes of Disasters in Libraries

The 2009 floods in KeMU Library Mombasa campus brought business to a halt when floods found its way through the library floor dampening information materials kept on the floor of the library. Business halted for two days in the library premises and library users had to forgo their businesses in the library.

2.7.2 Artificial Disasters in Libraries

Computer virus is a program that can infect other computer programs. When an infected file is run or accessed, the virus is triggered, and can cause damage to the files in a machine and hence bringing activities of the library to a halt. This kind of a disaster as ever happened at the KeMU library Nairobi campus where viruses replicated themselves in the machines at the digital library and all activities within the digital library was brought to a halt for a week.

Power failure is one of the artificial causes of disasters in libraries. Only when KeMU electricity went off for some days is when we realize our dependence on it. Without

electric power, businesses in the library was forced to close, incurring huge losses for the library and their users, communications and university's operations at large due to the dependence of electricity in the operations.

The afternoon of 7 August 1998 saw the grim face of acts of terrorism on the library of the US embassy in Kenya as the terrorists attacked the building housing the America embassy. The building housing the library was brought down by an act of terrorism and information materials within the library were scattered while others were burnt down.

A YMCA library in the Gaza Strip was bombed by Muslim extremist attack in 2008. An estimated 10,000 books, some of them very old, were destroyed after an explosive device was placed in the Young Men's Christian Association's library.

2.8   PREVIOUS DISASTERS IN LIBRARIES

2.8.1   Library of Academy of Sciences

The largest fire disaster in library history occurred at the Library of the Academy of Sciences library in February 1988 when German raiders set fire to the library of the U.S.S.R. Academy of Sciences, one of the most famous landmarks in the city. Almost 3.6 million books were affected by water, smoke, or high humidity and temperature during those awful days. Estimates indicated that the Library lost 400,000 of its books and one third of its newspaper collections. Nearly 200,000 books were identified as requiring restoration. (Shapkina Larissa B. et al 1991).

2.8.2 Library of Congress

The Library of Congress itself suffered the ravages of two major fires in the 19th century, the first one was in 1825 where by a small fire erupted in the library and burned some duplicate volumes, in 1851 a more serious fire destroyed two thirds of the cumulated holdings which was approximated to be 35,000 volumes.

2.8.3 Los Angeles Public Library

On the morning of April 29, 1986, one of the most challenging structure fires in the history of the Los Angeles Fire Department occurred at the Los Angeles Central Library, the Los Angeles Public Library almost disappeared. A roaring major emergency fire created havoc and took hours to bring under control. First in companies did not immediately find the fire, as it was well hidden in the stacks on an upper floor. Due to the construction techniques used at the time it was built, a channel of air throughout the building allowed the fire to accelerate. Filled with books and other flammable materials, the library was a hive for fire. Extinguishing this blaze required sixty fire companies, nine rescue ambulances, two helicopters, forty command officers and support personnel, a complement of over 350 Firefighters and Paramedics, and assistance from virtually every element of the Department. (Manning O. Donald, 1986).

2.8.4 Haiti

Three days after the earthquake in Haiti the director of the national library reported that the building of the National library was safe though the shelves and holdings had shifted. The library building was the only one standing in the whole area. At that time

he had not yet been able to locate all the personnel, 1/2 of them were safe but he could not locate the rest. (BA news 2010).

Saint Martial College in which there is the Bibliothèque Haïtienne des Pères du Saint Esprit collapsed. This is the oldest library in Port au Prince. The Library of Saint Louis de Gonzague was heavily damaged too and both these libraries gathered very old collections from the 16th century. (Mincio, 2010).

The worst earthquake to hit the Caribbean in two centuries destroyed much of Port-au-Prince, Haiti, near the epicenter, when it hit on 12 January 2010. Still uncertain are the fate of many libraries. One report indicates the library of the American University of the Caribbean on the Les Cayes campus collapsed. The headquarters of UN peacekeepers crushed down with its library destroying everything. The parliament building was no exception; it came down too with its collections. (The standard 14 Jan 2010).

2.8.5   Croatia

The 1991-1995 war in Croatia severely affected the Croatian library and information systems in a number of ways: normal information flow was interrupted; subscription to foreign periodicals abolished and work on some projects stopped within the library. When war broke out it was, for a certain period of time, impossible to subscribe to foreign periodicals or to buy foreign books within the library because of inflation and difficulties caused by the war.

War reduced the number of library staff since people left the war affected areas. as danger, fear and a sense of the absurdity of keeping libraries open when people should be saving their lives and possession, also made a great number of librarians leave the war zones. The male staffs also had to join the army to reinforce the dwindling armed forces.

Working conditions in Croatia were extremely difficult and hence librarians had to give up routine work and clear up the mess after the library had been hit. (Mathews and Feather, 2003).

2.9   DISASTER PLANNING AND PREPAREDNESS IN LIBRARIES

2.9.1   Disaster Planning

According to Eden and Mathews (1996) disaster planning is concerned with the formulation of a written plan which gives details of preventive and preparatory measures intended to reduce potential risks, and which also indicates reactive and recovery procedures to be taken in the event of a disaster in order to minimize its effect.

Levitt (1997) observes that most organizations have not established a comprehensive strategy for disaster planning and recovery. The percentage of organizations that lack any semblance of a plan is, simply put, frighteningly large. He also noted that many disaster contingency plans that exist are applicable only to certain specific business processes or designed only to rescue specific bits and pieces of the business, not to save the entire organization. Many other companies' disaster planning policies, meanwhile,

seem to consist only of disaster insurance. Such coverage is valuable, but it is only of limited usefulness.

Bazzell and Kahn (1999), says that we all should be aware of the importance of preparedness for unexpected disasters. If libraries do not have a disaster response plan then it is very dangerous when a disaster occurs. As the author often states, since individual organizations differ in size, location, mission and focus, it can be used as a starting point, and each individual organization must tailor a plan to fit its own situation.

According to Mathews and Eden (1997), libraries must therefore plan for disasters in the following ways:

- Putting in place measures that minimizes or reduce risks or damage to archival and other information materials in the event of a disaster.
- Measures should include storage of materials in proper equipment, making of security copies and keeping them off-site, ensuring safety inside and outside the building and ensuring of safety materials.
- Ensuring good house-keeping, building maintenance
- Training of staff in prevention and salvage procedures
- Installations and maintenance of fire equipment

It is important to note, however, that having the best plan or the most experienced team will not always guarantee a successful disaster response. There are some disasters whose magnitude and/or unique characteristics will stress even the most prepared

system or team. In these cases, individual and system flexibility is imperative. Developing a plan and response team that is flexible and able to adapt to whatever occurs is extremely important. In many cases, peoples' lives will depend on it. Consider the scenario where an entire library is rendered inoperable as a result of a fire. A plan and response team that had only considered the provision of services from their usual site will quickly become overwhelmed with how to respond when their site suddenly does not exist.

2.9.2   Disaster Preparedness

Disaster preparedness is the process of ensuring that an organization has complied with the preventive measures, is in a state of readiness to contain the effects of a forecasted disastrous event to minimize loss of life, injury, and damage to property, can provide rescue, relief, rehabilitation, and other services in the aftermath of the disaster, and has the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them. Preparedness for the first and immediate response is called emergency preparedness**.** According to Mathews and Eden (1997), libraries must therefore prepare for disasters in the following ways:

- Disaster control plans like any other plans have to be managed. The person(s) responsible for drawing up the plan will need to liaise and negotiate with staff in other departments in their organization. They will need to liaise with representatives from the security service and commercial organizations, such as binders and salvage and recovery experts, outside their organizations. Very often this will involve interaction with high-level personnel. The person(s) responsible

for the plan must therefore have the authority, ability and confidence to make on-the-spot decisions at that level.

- After the disaster control plan itself has been drawn up and the persons responsible for disaster management selected, the most important activity that follows is training. Any training required by those responsible for drawing up the plan should be considered first. Training should then be carefully targeted at other specific audiences. More in-depth training should be targeted at those who would be heavily involved in a disaster response, and awareness raising targeted at those who would be less heavily involved. The training should also include library staff in order to acquire disaster response techniques.

- Make a list of salvage and recovery experts and suppliers of other emergency services and equipment, such as Ambulances, fire brigades, dehumidifiers, and transportation, so that they can be contacted immediately following a disaster. The library staff must contact them personally, explaining the needs and requirements - and make sure that contact names, telephone numbers and addresses are always kept up-to-date.

- Catalogues of collections and inventories of equipment and furniture should be kept up to date, and copies kept in safe, separate locations: for example, in metal, fire-proof cabinets and, where possible, in another building or on another site. Catalogues and inventories are not only invaluable when trying to rebuild collections and replace equipment and furnishings, they also help to establish proof of losses to insurers and loss adjusters.

- Computer systems, software and files must be backed-up and, wherever possible, copies of software and files stored off-site. Liaison with internal computing departments and service providers should be undertaken to establish security and recovery requirements, and temporary service and access arrangements (including telecommunications). Responsibility for these and the costs involved should also be established. PCs and networked systems must both be considered.

- Emergency arrangements should be made for setting up temporary services, accommodation and storage. Following a disaster, organizations will still need to provide some kind of service to their users, while damaged and "at risk" items may need to be removed from danger areas. The library may also need to employ emergency procedures until access to online computer systems is restored. In the event of a more serious disaster, this may become the major responsibility of an individual or team reacting to events as they unfold.

2.10   REVIEW OF EMPIRICAL STUDIES

Levitt (1997) observes that most organizations have not established a comprehensive strategy for disaster planning and recovery in their libraries. The percentage of organizations that lack any semblance of a plan is, simply put, frighteningly large. Levitt also noted that many disaster contingency plans that do exist are applicable only to certain specific business processes or rather designed only to rescue specific bits and pieces of the business, not to save the entire organization. Many other companies'

disaster planning policies, meanwhile, seem to consist only of disaster insurance. Such coverage is valuable, but it is only of limited usefulness.

Myers (1993) describes disaster insurance as only one element of a comprehensive disaster contingency plan. The role of insurance in protecting against loss of physical assets, such as buildings and equipment, is clear. A disaster recovery and business continuation plan, however, has three objectives, prevent disasters from happening; provide an organized response to a disaster situation; and ensure business continuity until normal business operations can be resumed.

Wellheiser and Scott (2003) with the aim of providing planners with a pragmatic, broad-based approach saw the book as a natural focus on policies and practices. Both of them held the belief that "the process of disaster planning can only be successfully achieved by first acknowledging it as a broad organizational responsibility, one that must be encouraged, managed and coordinated. They further stressed on the importance of an ongoing integrated process, rather than the singular goal of compiling information for a disaster plan".

In addition, the interdependence of all the phases of disaster planning, prevention, protection, preparedness, response, recovery, rehabilitation and post-disaster assessment is emphasized in their writings. Special attention is given to disaster planning in the areas of electronic records and computer systems. Unlike its earlier edition that focused on single item conservation and procedural details, their book is designed as a planning

tool to manage the whole process (before, during and after). As the single most comprehensive disaster planning manual to date, the book is highly recommended to all archivists, librarians and record managers who plan to initiate or improve disaster management programs of their institutions.

Bazzell and Kahn (1999), says that we all should be aware of the importance of preparedness for unexpected disasters. If libraries do not have a disaster response plan then it is very dangerous when a disaster occurs. As the author often states, since individual organizations differ in size, location, mission and focus, it can be used as a starting point, and each individual organization must tailor a plan to fit its own situation. Paton (2007) tries to examine how perception of the relationship between people and sources of information influence hazard preparedness and how trust in civic emergency planning agencies responsible for risk communication influences preparedness decisions. He aimed at the hypothesis that familiarity with and information about hazards predicts the relative importance of trust; and that levels of trust are influenced by community characteristics.

Paton (2007) further stated that a cross-sectional analysis of the relationship between trust and hazard preparedness was conducted. Hypotheses were tested using data on bushfire, volcanic and earthquake hazards. Data were analyzed using multiple regression analyses. Findings of his research demonstrated the utility of this multi-level model for the analysis of risk communication and need to accommodate societal-level variables in future risk communication research. The source of information plays a role

in risk communication that is independent of the information per se. He also discovered that the relationship between people and civic agencies and the information provided must be accommodated in planning risk communication. The analysis provides an evidence-based framework for the development of risk communication strategies based on community engagement principles.

Walton (2007) explored the relevance of diversification in the strategic management of libraries sought to identify issues attached to diversification and also examples where libraries have pursued this strategy. Walton found out that diversification is important for libraries because of increased competition in places where people can access information. It provides a way to grow and develop. Various diversification approaches exist and they all have a level of risk. Extra resources are also necessary when diversification is pursued. Library managers have to be able to judge when the risks in diversification are justified. His research provided food for thought for library practitioners in the use of diversification in developing future services.

According to Pande and Pande (2007) for devicing a disaster management mechanism for reduction of effects of disaster, that is damage to property and loss of life and the rapid and effective rescue, relief and rehabilitation of the victims. One cannot stop disaster happening but can certainly take some steps to reduce its effects. If disasters cannot be averted, then reduction of losses of any type caused by disaster becomes a focal point of the policy for disaster management. A disaster of rare severity requires a high level of resettlement and rehabilitation assistance from the organizations top

management. Sound Resettlement and Rehabilitation Policy helps the Government to tackle the problem immediately and efficiently.

2.11   CONCLUSION

Disaster cannot be prevented totally. However, timely planning can minimize the effect of a disaster. An accurate disaster management plans needs to be prepared. The use of modern technology like GIS can be of vital importance in the preparation of plans. Keeping records of vulnerable areas, monitoring of rescue and relief operations deciding response, managing the data base.

CHAPTER THREE

RESEARCH METHODOGY

3.1 INTRODUCTION

This chapter discusses the research methodology used in the study. It presents discussions on the research design, research population, sampling, data collection instruments and data presentation, analysis and interpretation.

Research methodology encompasses the steps, activities and tools involved in the conducting of a study and collecting data appertaining to the study and the logic behind these steps, activities and tools (Bryant & Miron, 2006). These steps and tools include, identification of the research population, sampling, data collection tools and data analysis tools and the justification of each of the tools selected (Blaikie,2007; Jespresen, 2005; Lauriol, 2006). In other words, research methodology is the operational framework within which facts are placed more clearly.

Kothari (2004) observes that when we talk of research methodology, we not only talk about the methods used to collect data but also, "consider the logic behind these methods we use in the context of the study and explain why we are using a particular method" to draw a sample and collect data and not another method. A research methodology defines what the activity of research is, how to proceed, how to measure progress, and what constitutes success.

Sachdeva (2009) states that a good research requires:

- The scope and limitation of the work to be clearly defined

- The process to be clearly explained so that it can be reproduced and verified by other researchers

- A thoroughly planned design that is as objective as possible

- Highly ethical standards are applied

- All limitations are documented

- Data be adequately analyzed and explained.

- All findings are presented unambiguously and all conclusions be justified by sufficient evidence.

According to Phophalia (2010) research methods are basically related with observation of reality, defining the problem and its dimensions, a planned approach towards analysis of the research problem, interpretation of information and drawing conclusions. Through this process a researcher attempts to acquire knowledge and understanding of the research problem and make concrete suggestions towards its better solution. The success depends upon sensitivity, power of observation, logical thinking process and ability to draw conclusions assimilating a large mass of research information. He stated the following methods in modern research:

- Historical Method

- Descriptive Method

- Experimental Method

- Field Study Method

- Case Study Method

- Statistical Method

3.2 RESEARCH DESIGN

According to Kothari (2004) research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. it is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. The design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data.

- The sampling design this deals with the method of selecting items to be observed for the given study.

- The observational design relates to the conditions under which the observations are to be made.

- The statistical design this is concerns with the question of how many items are to be observed and how the information and data gathered are to be analyzed.

- The operational design it deals with the techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.

Research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money.

3.2.1 Case Study Method

Gillham (2010) states that a case is something we have been using in everyday activities and operations and feel we understand but its rather challenging to define and he came up with certain definition that tend to suit it.

- A unit of human activity embedded in the real world

- Which can only be studied or understood in context

- Which exists in the here and now

- That merges in with its context so that precise boundaries are difficult to draw

A case can be an individual: it can be a group - such as a family, or a class, or an office, or a hospital ward; it can be an institution - such as a school or a children's home, or a factory; it can be a large-scale community - a town, an industry, a profession. All of these are single cases; but you can also study multiple cases: a number of single parents; several schools; two different professions.

A case study according to Gillham (2010) is one which investigates the cases to answer specific research questions and which seeks a range of different kinds of evidence, evidence which is there in the case setting, and which has to be abstracted and collated to get the best possible answers to the research questions. No one kind or source of

evidence is likely to be sufficient (or sufficiently valid) on its own. This use of multiple sources of evidence, each with its strengths and weaknesses, is a key characteristic of case study research. Another fundamental characteristic is that you do not start out with a priori theoretical notions (whether derived from the literature or not) - because until you get in there and get hold of your data, get to understand the context, you won't know what theories (explanations) work best or make the most sense.

Phophalia (2010) states that in case study method, the investigator makes intensive investigation of an economical or social unit, which may be a person, a family, a group, an institution, a community or even an entire culture. The investigator gathers pertinent information about present status, past experiences and environmental forces which contribute to the individuality and behaviour of the unit. The case study is an intensive; integrated and insightful method of studying a social phenomenon. It can also be used to illustrate the theory by providing an example. However, it has many limitations such as:

- It is more expensive, being exploratory in nature
- The generalizations based on a single case cannot be applied to the entire population.
- It is based on available information assumptions regarding the test. and certain
- There is strong possibility of subjectivity in results. The investigator should guard against personal bias, which may influence the interpretations.

The study was a qualitative research based on a case study of Kenya Methodist University. Clayton (2010) defines qualitative research as a field of inquiry that cuts across disciplines and subject matters. It aims to gather an in-depth understanding of human behavior and the reasons that govern such behaviors. The discipline investigates the why and how of decision making, not just what, where, when. Hence, smaller but focused samples are more often needed rather than large random samples.

3.3 STUDY POPULATION AND SAMPLING

3.3.1 Population

Mugenda and Mugenda (1999) define population as an entire group of individuals, events or objects having a common observable characteristic. The aggregate of all elements, sharing some common set of characteristics, which comprises the universe for the purpose of the marketing research problem.

Kasomo (2006) defines population as any group of institutions, people or objectives that have at least one characteristic in common. He describes it as the aggregate of all cases that conform to some designated set of specification.

Mcburney and White (2007) define population as the entire collection of individuals being considered.

According to Krishnaswami (2010) empirical field studies require collection of first-hand information or data pertaining to the units of study from the field. The units of study may include geographical areas like districts, cities or villages which are covered

by the study, or institutions or households about which information is required, or persons from whom information is required, or persons from whom information is available. The aggregate of all the units pertaining to a study is called the population or the universe. Population is the target group to be studied.

The population of the study comprised of KeMU staff working in the Library department, Operations Department and the Security Department. These three departments had direct responsibility in disaster management in KeMU Library. The entire population size in the study was 50 as indicated in table 3.1 below.

Table 3.1: Study Population

Category	Population Frequency	Percentage
University Library Staff	26	52
Security Department	13	26
Operations Department	11	22
Total	**50**	**100**

3.3.2 Sampling

Mugenda and Mugenda (1999) define sampling as the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected.

According to Hart (2005), sampling is about carefully selecting a sub-set (sample) of a specific population that can be shown to share the properties or variables of the population. He argued that the findings from the sample can be employed to make inferences, to varying degrees of confidence, about the larger population.

The sample should represent the population and have sufficient size so a given innovative inference can be subjected to a fair statistical analysis. Unfortunately, all samples deviate from the true nature of the overall population by a certain amount due to chance variations in drawing the sample's few cases from the population's many possible members (Mendy, 2007).

Aims of sampling

Well-selected sampling may reflect fairly accurately the characteristics of the population. For example, with a survey of a sample of voters, one can predict the voting intentions of millions of voters. A specified value of the population, such as average of variance is named parameter; the corresponding value in the sample is termed a statistic. The chief aim of sampling is to make an inference about an unknown parameter from a measurable sample statistic.

Sampling is to test a statistical hypothesis relating to population. A sample is drawn and the data collected from the sample informants are analysed and on the basis of the result the hypothesis may be accepted or rejected.

Whether the result obtained from a sample survey would be accurate or not depends upon the quality of the sample. The characteristics of a good sample are (Krishnaswami, 2010):

Representativeness: A sample must be representative of the population. Probability sampling technique yield representative sample. In measurement terms, the sample must be valid. The validity of a sample depends upon its accuracy and precision.

Accuracy: Accuracy is defined as the degree to which bias is absent from the sample. An accurate (unbiased) sample is one which exactly represents the population. It is free from any influence that causes any difference between sample value and population value.

Precision: The sample must yield precise estimate. Precision is measured by the standard error or standard deviation of the sample estimate. The smaller the standard error or estimate, the higher is the precision of the sample.

Size: A good sample must be adequate in size in order to be reliable. The sample should be of such size that the inferences drawn from the sample are accurate to the given level of confidence.

Sampling reduces the time and cost of research studies. it became possible to undertake the study at a reasonable cost and time.

Sampling saves labour. I had to conduct the research individually both for fieldwork and for processing and analyzing the data.

The quality of a study I assume was better with sampling than with a complete coverage. Since I had a one on one interview with the correspondence, better supervision of the work and processing was great too.

Sampling provides much quicker results. The speed of execution minimizes the time between the recognition of a need for information and the availability of that information. Timely execution of a study is essential for making use of its findings.

3.3.2.1 Types of Sampling

1. Simple Random Sampling

A simple random sample is obtained by choosing elementary units in search a way that each unit in the population has an equal chance of being selected (Hughes, 2008). A simple random sample is free from sampling bias. However, using a random number table to choose the elementary units can be cumbersome. If the sample is to be collected by a person untrained in statistics, then instructions may be misinterpreted and selections may be made improperly (Hughes,2008; Seaman,2008). Instead of using a list of random numbers, data collection can be simplified by selecting say every 10th or 100th unit after the first unit has been chosen randomly (Hughes, 2008).

2. Purposive Sampling

In purposive sampling according to Mugo (1995), a researcher handpicks subjects to participate in the study based on identified variables under consideration. This sampling method is used when the population for study is highly unique. For example HIV & AIDS widows. This method must assume that errors of judgment in ranges of the sample will tend to even out - as many subjects who are at the far ends of the population will cancel each other out (VanWynsberghe &Khan, 2007).

Purposive sampling is used for: validation of a test or instrument with a known population; collection of exploratory data from an unusual population; use in qualitative studies to study the lived experience of a specific population (Zina, 2004). This sampling technique was used to identify the respondents for face-to-face interviews namely: University Librarian, Assistant Librarian, Senior Library Assistants, Library Assistants, Security Manager, Security Officers and Operations Managers and Officers.

3.3.2.2 Population Sample Size

The sample for this study was drawn from staff of Kenya Methodist University. The sample size comprised of 32 staff selected from three departments which are; Library Department, Operations Department and Security department from the five campuses.

Table 3.2: Sampling Frame

Category	Population Frequency	Sample Frame	Percentage (%)
University Librarian	1	1	3
Assistant Librarian	2	2	6
Senior Library Assistant	13	8	24
Library Assistant	10	7	21
Operations Manager	1	1	3
Operations Officer	12	5	19
Security manager	1	1	3
Security Officers	10	7	21
Total	**50**	**32**	**100**

The respondents from the Library included 1 university librarian, 2 library assistants, 8 senior library assistants and 7 library assistants. Those from Operations Department comprised 1 operations manager and 5 operations officers. Respondents from Security department included 1 security manager and 7 security officers.

3.3.2.2.1 Justification of the sampling frame

1. University Librarian

The university librarian has the overall role of managing the university library**;** the respondent is in charge of developing and refining the library's mission statement, a

formalized declaration of the fundamental reasons for the library's existence. The respondent ensures that the library is working to meet the university's goals and objectives; hence she was useful in providing information regarding the strategies for disaster planning and preparedness within the library. Purposive sampling was used in selecting the university librarian.

2. Assistant librarian

The assistant librarian performs the duties assigned by the university librarian. He is the second in command after the university librarian and hence the respondent was useful in providing information regarding the strategies and activities for disaster planning and preparedness within the library.

Purposive sampling was used in selecting the university assistant librarians.

3. Senior Library Assistant

Senior library assistants are important members of staff in the library; they head various sections within the library and assign duties to their assistants. They help the assistant librarians in their duties too. The respondents were instrumental in providing information on how well and frequently were they trained in combating disaster.

Simple random sampling was used to select the senior library assistants of which three were from the Meru campus, two from Nairobi Campus and one from Nyeri, Mombasa and Nakuru campuses

4. Library Assistant

Library assistant is another member of the library support. The respondents organize library resources and make them available to users. At the circulation desk they lend and collect books, periodicals, videotapes and other materials. They assist senior library assistants in their duties. Due to their interaction with the library users they provided information on the type of business activities conducted in the library.

Just like in the senior library section, simple random sampling was used during the selection of the library assistants from all centers. To give the sample frame of the library assistants, two were from Meru campus, two from Nairobi campus, and one library assistant was selected from Nyeri, Nakuru and Mombasa campus respectively.

5. Operations manager

The operations manager is in charge of all the operations in the entire university. The respondent was helpful in providing information on challenges faced in the overall disaster planning and preparedness in the library buildings in the university, the physical facilities and practices in place for disaster mitigation.

6. Operations officer

The operations officers were twelve in total but seven among them were interviewed, two each from the main campus (Meru) and Nairobi campus while the remaining three from the remaining campuses were also interviewed.

The operations officers are in charge of daily operational activities at the various campuses. They provided information as to whether or not the equipment and physical facilities are in place for mitigation of disasters.

7. Security manger

The security manager is in charge of all security affairs within the entire university. The respondents provided information as to how much the library is secure from any disaster during its normal operations and how safe are its information resources, property and people. The researcher used purposive sampling in selecting the manager since the respondent is the only head of security in the university.

8. Security officers

The security officers are in charge of the daily surveillance within the campuses of the university. The respondents were able to provide information relating to security issues within the campuses premises.

3.4 DATA COLLECTION METHODS

Data collection is a term used to describe a process of preparing and collecting data (Freeman & Haddow, 2008). A formal data collection process is necessary as it ensures that data gathered is both defined and accurate and that subsequent decisions based on arguments embodied in the findings are valid. The process provides both a baseline from which to measure from and in certain cases a target on what to improve. Data Collection is an important aspect of any type of research study. Inaccurate data

collection can impact the results of a study and ultimately lead to invalid results. The data collection tools used by the researcher to collect data were mainly observation and interviews.

3.4.1 Observation

Observation involved looking at the physical measures in place within the university's library buildings for any disaster planning and preparedness. This method provides reliable data and additional information that may not be gotten through the questionnaires or interviews (Breakwell et al, 2006).

Whiten et al (2001) defines observation as a fact-finding technique in which the researcher participates in or watches performance of activities with an aim of learning about it. Observation entails therefore filtering sensory information through the thought process. Input of this information is received via hearing, sight, smell, taste, or touch and then analyzed through either rational or irrational thought. In observation, the researcher senses and assimilates the knowledge of a phenomenon in the researcher's framework of previous knowledge and ideas on the phenomenon under investigation (Robson, 2007; Richards, 2008; Leech, 2007).

Takashorri & Teddlie (2003) define observation as the procedure whereby the senses of touch, sight, smell, sound, or taste generate information about the objects touched and seen. It is the deliberate act of an observer who studies events using his or her sensory processes. Observation methods were not factored in this study since all the aspects

stated by the respondents were all common and hence were included in the interviews schedule.

3.4.2 Face to face Interviews

Face to Face interviews was the primary data collection instrument for the study. This is because the study was qualitative and quantitative in nature and interviews provided a good means of probing for information. An interview is a conversation between two or more people (the interviewer and the interviewee) where questions are asked by the interviewer to obtain information from the interviewee. A research interview is a structured social interaction between a researcher and a subject who is identified as a potential source of information, in which the interviewer initiates and controls the exchange to obtain quantifiable and comparable information relevant to an emerging or previously stated hypothesis.

The most commonly used are structured, semi structured and unstructured interviews (Raudenbush, 2005). Structured interview comes more under quantitative research methods as it is more like a questionnaire. Unstructured interview is when the researcher asks little questions and lets the interviewee do all the talking, to find out as much information as possible. Semi Structured Interviews involves a combination of both structured and unstructured interviews. In this mode, the researcher develops some questions for purposes of gathering information on the essential areas required to be later compared with responses from other respondents or interviewees and at the same

time create room for unstructured environment where the interviewee can give additional information that may not have been anticipated by the researcher.

Interviews were conducted by the researcher to the University Librarian, the Assistant Librarians, the senior library assistants, the library assistants, the security manager, the security officers, the operations manager and the operations officers. The researcher used semi-structured approach to ensure collection of relevant information in tandem with the research objectives and research questions and at the same time create room for probing more information that may have been useful to the research objectives.

3.5 DATA COLLECTION PROCEDURES

Interviews were done through physical visits to the university's satellite campuses by undertaking a personal interview with the selected respondents as it gives a good response rate, clarification of concepts was also made easier, the researcher was able to read from the visual aids and probe for more information from the respondents.

3.6 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Data analysis is the process of looking at data and summarizing it with intent to extracting useful information. This study was both quantitative and qualitative in nature and involved qualitative and quantitative data analysis approaches. According to Lewins, Taylor & Gibbs (2005), qualitative research techniques are used to obtain insight into certain situations or problems concerning which we have little knowledge. Qualitative techniques such as the use of semi-structured interviews was appropriate in

this study, to assist in probing as much information as possible around the objectives and research questions of the study.

Yin (2003) says that analyzing qualitative data can be both manual and computerized. The process of coding the textual data into themes and interpreting them can be done manually. However, after the coding process, the data can then be analyzed by use of computer packages in a quantitative-kind of analysis to establish similarity and disparity in responses, especially where several people have been interviewed on same questions semi-structurally.

Data for the study was done by categorizing the data into themes. Data interpretation was done thematically. Presentation of data was along the lines of the study objectives as revealed by the themes emanating from data analysis.

3.7 ETHICAL CONSIDERATIONS

Mugenda and Mugenda (2003) define ethics as that branch of philosophy which deals with one's conduct and serves as a guide to ones behavior. Resnik (2007) defines ethics as norms for conduct that distinguish between or acceptable and unacceptable behavior. According to Shamoo and Resnik (2003) ethics can also be defined as a method, procedure, or perspective for deciding how to act and for analyzing complex problems and issues.

Ethical concerns emerged as the researcher took on the research, seek access to organizations and to individuals, collect, analyze and report data. In context of research, ethics refers to the appropriateness of the researcher's behaviors' in relation to the rights of those who become the subject of the study, either the respondents or those affected by it (Walliman, 2005; Blakely, 2007; Kamuka & Anderson, 2007; Kelly& Yin,2007).

The researcher in his own capability had ethical guidelines to govern the completion of this thesis. This research was not for personal gain and did not aim at impacting a negative effect on any institution or individual. All works from individuals was acknowledged by the researcher in the reference section to avoid cases of plagiarism. Respondent's confidentiality and privacy is of utmost importance to the researcher and that their consent is sought before divulging any sort of information that they may have provided. The researcher is anonymous about the respondents. If the respondents would wish to find out about the findings of the research the researcher is willing to disseminate any findings on the research to the public at large. Concealing the research findings after completion of the research is unethical.

The researcher never acquired a permit from the ministry of Education since the study was done at KeMU and the researcher was a member of staff.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This chapter presents data, analyses and interprets the findings of the study. Data was collected through face-to-face interviews. Presentation of data is descriptive in nature and analysis has been done according to study objectives. The presentation of data has been done according to the way questions were structured on the data collection instrument, in the order of study objectives and under every category of respondents. Tables and figures have been used to present data.

4.2 CHARACTERISTICS OF RESPONDENTS

A total of 32 respondents were interviewed during the study. The respondents were drawn from three different roles at KeMU. These are the roles that have direct impact on disaster management at the KeMU library. Percentage composition of the respondent categories was as indicated in Table 4.1.

Table 4.1: Study Respondents (n=32)

Category	Number	Percentage
University Librarian	1	3.1
Assistant Librarian	2	6.1
Security Manager	1	3.1
Security Officers	7	21.9
Senior Library Assistants	8	25
Library Assistants	7	21.9
Operations Manager	1	3.1
Operations officers	5	15.6
Total	**32**	**100**

All the respondents targeted for the study participated returning a response rate of 100%.

4.3   BUSINESS PROCESS ANALYSIS

The first objective of the study was to conduct a business process analysis to understand the kind of activities the respondents conduct, their experiences at KeMU and the disaster profiles associated with their roles. An understanding of business activities was essential in building a clear understanding of disaster profile at the KeMU library and contextualizing the disaster management strategies within the business activities of KeMU library. The respondents feedback in relation to this objective was as indicated in the following discussion.

4.3.1   Data from University Librarian and Assistant librarian

1. Position at Library

Out of the three respondents interviewed were the University Librarian (UL) and two Assistant Librarians (AL). The assistant librarians were drawn from Nairobi Campus Library and Meru Campus Library.

2. Experience at KeMU

The respondents interviewed had the following working experiences in KeMU library. The university librarian had worked for 8 months in KeMU; one assistant librarian had worked for 3 years while the other had worked for 7 years.

3. Disasters Experienced

In relation to disasters experienced at KeMU, the respondents were asked to indicate if they have ever experienced any disaster while at KeMU. The university librarian and an assistant librarian stationed in Nairobi campus stated that computer viruses in the digital library left the feeling of helplessness in a way that business was brought to a halt for a week. Calm was later restored when the Information Technology (IT) department intervened by running anti viruses software in all the digital library machines. The respondents went ahead to state theft of information materials and leakages from water pipes as other threats to information materials within the library.

4. **Disaster Exposure**

The respondents were asked to indicate what possible disasters they thought they are exposed to or can materialize out of the course of their business activities at the KeMU library. The respondents cited the disasters as indicated in Table 4.2

Table 4.2: Disaster exposure at the KeMU library as cited by University Librarian and Assistant Librarians

Respondent 1	"fires, floods, theft, biological agents, computer viruses, bombs and earthquakes, vandalism"
Respondent 2	"Terrorism, theft, floods, fires, vandalism, biological agents"
Respondent 3	"computer viruses, theft, fires, vandalism, floods, biological agents, earthquakes"

5. **Duties in the library**

The University Librarian is responsible for overall management of the library service at KeMU. She is charged with supervising all library staff, overseeing all library operations, approving all library expenditures, assigning duties to library staff and providing overall leadership to the library team across the university network. The University Librarian is also a member of the University Senate-the top academic body of the University.

4.3.2 Data from Security Officers

1. Position at the university

Out of the eight respondents interviewed 1 (12.5%) was the Security Manager and the other 7 (87.5%) were security officers. The officers were drawn from different campuses as indicated in Figure 4.1.
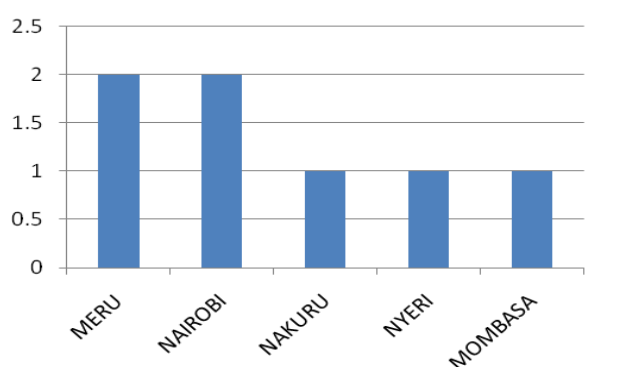
Figure 4.1: Security Officers interviewed from campuses

2. Experience at KeMU

Regarding the experiences of the respondents from security department, their feedback was as indicated in Table 4.3.

Table 4.3: Security Officers Experience at KeMU

Years of Service	No of Respondents
0-5	7
6-10	-
11-15	1

3. Disasters Experienced

In relation to disasters experienced at KeMU, the respondents were asked to indicate if they have ever experienced any disaster while at KeMU. The respondents stated the following as disaster experience and threats that has ever occurred at KeMU libraries: "experienced floods resulting from poor drainage, air condition systems, burst water pipes, leakages, and theft of information materials."

4. Duties and Responsibilities

Regarding their duties and responsibilities as security officers, the respondents cited the following as their official duties and responsibilities:

- "Protect life and property"

- "Investigate any allegation regarding the discipline of students"

- "Medium between the University and other external security agents like police".

- "Investigate fraud allegations regarding staff and student"

- "Manage training of fire marshals"

- "Conduct staff trainings of disaster management"

- "Conduct fire drills"

- "Monitoring of CCTVs"

- "Supervise all security guards outsourced by the University".

4.3.3. Data from Senior Library Assistants and Library Assistants

1. Position at the KeMU Library

Out of the 15 Senior Library Assistants (SLA) and Library Assistants (LA) interviewed, 8 respondents (53%) were SLA and 7 (47%) respondents were LA.

Station

The campuses of work for the 15 respondents were as indicated in Table 4.4

Table 4.4: Station of the respondents in the Library Department   n=15

Campus	Frequency	Percentage
Mombasa	2	13.33
Nyeri	2	13.33
Nakuru	2	13.33
Meru	5	33.33
Nairobi	4	26.67
TOTAL	**15**	**100**

2. Experience at KeMU

With regard to the period of service the respondents had worked at KeMU, five respondents reported to have worked at KeMU for less than two years. The period of service for the other respondents was as indicated in Table 4.5

Table 4.5: SLA and LA experience at KeMU

No of years	Frequency	Percentage
0-2	5	33.33
2-4	8	53.33
4-6	2	13.33
TOTAL	**15**	**100**

4 Duties and Responsibilities

With regard to their duties and responsibilities as SLA and LA, the respondents cited the following as their official duties and responsibilities:

- "acquisition of information materials for the library"

- "processing of information materials"

- "conduct library orientations for both new staff and students"

- "Provide circulation and references services"

- "Enforce safety of information materials within the library"

- "maintain order within the library"

- "Digital library management"

- "update library website and database"

- "development of library collection"

- "New user registration"

- "liaising with the University Librarian and Senior Librarians"

4.3.4   Data from Operations Manager and Operation Officers

1. Distribution

The study also found out the distribution of operation officers across KeMU campuses. Six respondents were interviewed under this category. Out of the six, 1 (16.67%) was the Operations Manager, whereas the other 5 (83.33%) were Operation Officers. The officers were distributed across the KeMU campuses as indicated in Table 4.6.

Table 4.6: Operations Officers work stations

Campus	Frequency	percentage
Meru	1	16.67
Nairobi	2	33.33
Mombasa	1	16.67
Nakuru	1	16.67
Nyeri	1	16.67

5   Duties and Responsibilities

When asked on their duties and responsibilities as Operations Officers, the respondents cited the following as their official duties and responsibilities:

- "Classrooms allocations"
- "Office space allocations"

- "Caretaker of the KeMU buildings and other physical resources"

- "Maintenance of fire extinguishers equipment"

- "Ensuring that fire exit points are clear and unlocked"

- "Supervision of cleaners"

- "Rent collection"

- "Manage operational budget"

- "Ensure compliance to occupational, health and safety"

- "Liaise with security department to administer training on disaster management"

4.4   DISASTER PLANNING AND PREPAREDNESS STRATEGIES

4.4.1   Data from University Librarian and Assistant Librarians

1.   Disaster Management Plans at KeMU

The University Librarian and Assistant Librarians were asked as to whether there existed disaster management plans at KeMU library. All the respondents reported to have a disaster management plan at the KeMU Library.

When probed further on the elements of the plan, the respondents reported the plan covers the following aspects:

- "Disaster prevention actions"

- "Information resource preservation"

- "Guidelines for response/reaction during disaster"

- "Recovery from disasters"

- "Responsibility for disaster management in the library"

- "Capacity building on disaster management for both staff and students and other users of the library".

2.   Physical facility for protection of information resources

The University Librarian and the Assistant Librarians were asked about the types of physical facilities in their libraries for the protection of information resources. They all respondent that they had physical facilities positioned in the libraries and the facilities within the library were stated as:

- "Bugler proof "

- "Fire extinguishers which include carbon dioxide gas, water cylinders, foam cylinders and horse reels"

- "Security systems that comprises of 3M and the CCTVs "

- "Shelves and cabinets though cabinet are not fire proof and not enough "

- "Smoke detectors in Nairobi campus and Meru campus libraries"

3. Safety Audits for the Library

The University Librarian and Assistant Librarians were asked whether audits to ascertain safety of the library and its holdings are conducted periodically. Two respondents stated that audits in the premise are conducted semi-annually.

However, one respondent when interviewed stated that "the audits are done only when Commission for Higher Education inspection is around the corner". When asked how often CHE visits the library, the respondent replied that for the four years she has been to Nairobi Campus CHE have only visited once.

4.   Fire Drills in the Library

Regarding fire drills, the respondents were asked whether they conduct fire drills in the library to measure user awareness of fire response. Their responses were as indicated below:

"Yes. Only when there is preparation for CHE inspection"

"Yes. But only when the drill is being done for the entire university in preparation for inspection by the CHE"

"Yes, as a normal security check but not consistent"

The respondents were probed further on who conducts the fire drills. All of them indicated that the fire drills are conducted by the KeMU Security Department and Operations Department.

4.3.2   Data from SLA and LA

1. Disaster Preparedness by the Library

Respondents were asked on whether they thought their respective libraries were adequately prepared to handle disasters. Out of the 15 respondents, five said they felt their libraries are well prepared and ten said they thought their libraries are not well prepared.

When probed further the SLA and LA stated the following as being the factors that

hinder the libraries' preparedness in KeMU

"Fire drills are not consistent"

"Lack of security systems"

"Lack of smoke detectors"

"Training is not frequent"

"Lack of modern equipment to cater for electronic materials"

"Lack of CCTV's"

"Lack of user awareness"

4.4.3   Data from Security Manager and Security Officers

1.   Disaster Management Plans at KeMU

The respondents from security department were asked whether there exists a disaster

management plan for the entire university. All the respondents out of the 8 (100%)

reported that there is a disaster management plan for the university. When probed on

who developed the policy, the security manager reported that the plan was developed

jointly by the Security Department and Operations Department. The other 7 respondents

(87.5%) were not sure of the source of the disaster management plan and they went

ahead to state that enforcement of security policies in place is always a problem.

2.   Physical facility for protection of information resources

The security officers were interviewed on availability for adequate equipment to respond to disasters. The respondents cited the following equipment as having been installed at KeMU premises including some of the libraries:

- "smoke detectors"

- "water reels and horse pipes"

- "burglar proof facilities"

- "CCTV cameras"

- "Fire proof safes for vital documents"

- "Computer backup systems"

- "Central computer databases"

3.   Installation of disaster response equipment in the Library Buildings

The respondents were asked whether they have installed the disaster response equipment in all the KeMU libraries. All (100%) the respondents indicated that the disaster equipment have been installed in the KeMU libraries across all the campuses. When probed further on the distribution of equipment across the campuses, the response was as indicated in Table 4.7.

Table 4.7: Installation of Disaster Response Equipment at KeMU campuses (n=5)

Equipment	Campuses Installed	Percentage
Smoke detectors	3	60
Water reels and horse pipes	5	100
Burglar proof facilities	5	100
CCTV cameras	1	20
Fire proof safes for vital documents	1	20
Computer backup systems	1	20
Central computer databases	5	100
Library Security system	3	60

Three libraries of the five have smoke detectors, The security manager stated that the reasons for this is that the buildings housing the libraries were constructed to conform with the library structures apart from Nairobi campus which its floor was tailor made to house some facilities, he went ahead to state that Nakuru and Nyeri campuses are situated on commercial buildings and hence they lack the smoke detectors.

When probed further about the safety of information materials in the library the security officers stated that they have security measures put in place in order to minimize or prevent theft, mutilation or vandalism of information materials. The research found that a number of security measures had been put in place by the security department. These included security guards, staff observation, closed circuit televisions (CCTV), and

buglar proof facilities. Three campuses had been installed with 3M security system in the libraries as sensor gates at their main entrances to detect information materials not checked out from the library and these were Meru, Nairobi and Mombasa. The respondent stated that it was only Nairobi campus which used CCTV to monitor the movement of users in the library while the rest lacked the facility. One campus had fire proof safe for vital documents while the rest lack fire proof safes. So in case of any fire in one of the campuses then vital and sensitive information will be lost.

4.4.4   Data from Operations Manager and Operation Officers

1.   Disaster Management Plans at KeMU

The respondents from Operations Department were asked whether they are aware of provisions of the disaster management plan for KeMU. Three (50%) respondents stated that they were aware of the requirements of the disaster management plan for KeMU. Two (33.33%) respondents stated that they were partially aware of the requirements of the disaster management plan for KeMU. One (16.67%) respondent stated that he actually knew nothing on the provisions of the disaster management plan for KeMU.

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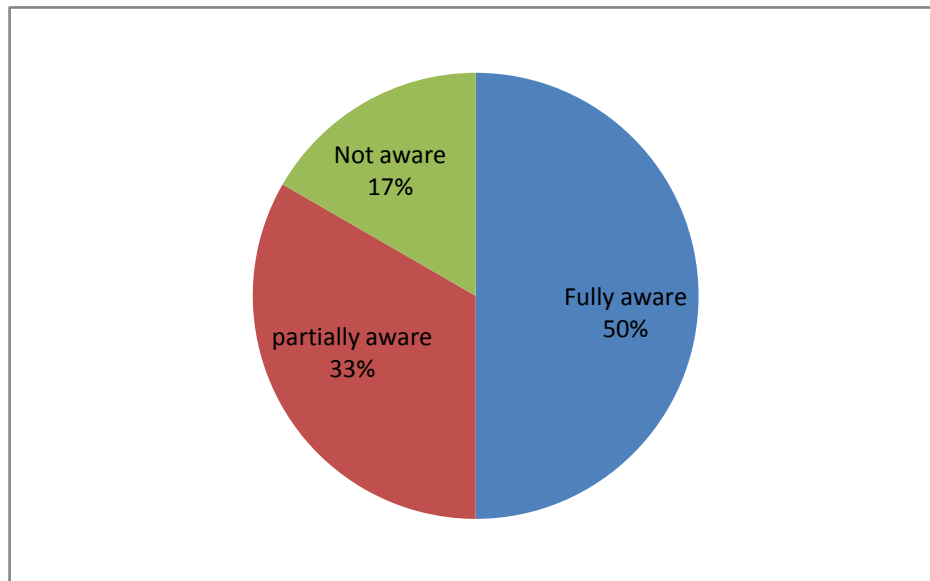
Figure 4.4.4: Awareness of disaster management plan by Operations Department respondents

4.5 DISASTER MANAGEMENT CAPACITY BUILDING AT KeMU

One of the objectives of the study was to establish levels of trainings on disaster management at KeMU. The feedback from the respondents interviewed was as in the following discussion.

4.5.1. Data from University Librarian and Assistant Librarians

1.   Levels of training

When asked about how many staffs in the libraries have been trained on disaster management, two respondents out of the three stated that they are not sure of the number of staff who had undergone training in disaster planning and preparedness. One respondent stated that nearly three quarters of the staff were trained either in their

academic study or during the normal disaster management training in the institution. One respondent went ahead to state that "training is only provided to the staff when there is a commission of higher education inspection and the training is always theoretical".

2.   Mode of training

Regarding mode of training, the respondent sought to find out whether the staff are trained in-house or externally. The respondents stated that the training is done both in-house and externally and they stated the following bodies as the trainers of disaster management at KeMU as shown in table 4.8.

Table 4.8: Respondent's mode of training at KeMU

Respondents	Trainers
Respondent 1	Security department.
Respondent 2	Operations department, Jolemac fire protection limited
Respondent 3	Security department and Jolemac fire protection limited.

3.   Scope of training

The study also sought to find out the depth of training on disaster specifically on the areas or aspects it covers. The aspects stated by the respondents were:

"First aid"

"Fire suppression"

"Protection of information resources"

"Protection of human life"

"How to deal with the biological agents affecting information materials"

"Terrorism threats"

"Flood control"

When probed on who develops the curriculum of training, one respondent stated that the curriculum is developed by the security department in conjunction with the Operation Department, Library Department and IT Department. The second respondent stated that the curriculum is developed by the top level management at KeMU. The third respondent stated that the curriculum is developed by in-house experts, the Security Department and external experts.

4.   Training provider

The respondents, when asked on who provides training, reported that the training is provided by both internal and external experts. Internal trainers included staff from Security Departments, Operation Department and IT department while the external experts were from jolemac fire protection.

5.   Place and intervals of training

With regard to where the trainings are actually done, the respondents reported that trainings are done in-house and also externally, away from the University. One respondent stated that In-house training is done within the university premises and is done according to departments and floors.

On external training one respondent stated that fire marshals on every department are taken for more advanced training with Jolemac fire protection limited. Regarding the intervals at which the trainings are done, the respondents reported that training is done only once per year. When further probed on why this is done once per year the respondent stated that it is done so in preparation for CHE inspection that is done once in a year.

6. Audit trails to ascertain the safety of library materials.

The respondents were interviewed on whether periodic audits are conducted in the library to access the state of library information materials. The operations manager stated that "fire certificates are issued yearly and before the issuance audits are performed to disaster equipment to ascertain their efficiency of which a certificate is offered at the end of the exercise by the Nairobi City Council."

5.4.2 Data from SLA and LA

1. Training on disaster management

The study found out levels of training in disaster planning and preparedness for SLA and LA. When asked if they had undergone training on any aspect of disaster management in their respective libraries. Nine (60 %) out of the 15 respondents stated that they had undergone disaster management training.   The other remaining respondents who were mainly library assistant 4 (26.67%) had not under gone training in their academic programmes and 2 (13.33%) of them had under gone training within the institution. When asked about training one of the respondents who underwent

training stated "about disaster management? I received some basics during my undergraduate training on information management". Out of the 9 respondents who underwent training 8 were senior library assistants while one was a library assistant.

When further probe on why she had not undergone training one of the respondent who did not receive academic training stated "I have not been trained on any disaster management because it was not offered in my institution of learning."

2. Kind of firefighting equipment available in the library

The respondents were asked to state the available fire equipment in the libraries. Their responses were as indicated.

"Horse pipes,

"Carbon dioxide cylinders"

"Water Cylinders"

"Foam cylinders"

"Sirens"

"Smoke detectors"

"Emergency Exits"

"Sprinklers"

"Gongs"

"Alarms"

3. Location of the firefighting equipment

When asked about whether they were aware of the location of the firefighting equipment in the library, all SLA and LA agreed that they were aware of the location of

the firefighting equipment in the library and they listed the following firefighting equipment available in their libraries as: horse reel, electric alarms and gongs, smoke detectors, and fire extinguishers for example carbon dioxide gas, powder foam and water cylinders.

When asked about the familiarity of the library users on disaster response measures they all stated that their library users are not familiar with the disaster response measures. This is what a few of the respondents stated when asked if their library users were familiar with the disaster response measures "the library users are not familiar with the response because they are not enlightened by the fire marshals", one respondent in Mombasa said "our users are not familiar with the disaster response measures because we have not had a training for users as a department". One respondent in Nairobi stated that "yes some underwent the fire drill and no because not all were present for the fire drill" the respondent went ahead to state that "the users are not familiar because no training has ever been done to library users concerning disaster response measures".

4.   Library users' familiarity with disaster response measures.

The SLA and LA were asked whether the library users are familiar with disaster response measures within the library. Eleven out of 15 respondents said that the users were not familiar with disaster response measures within the library while four said that the users were familiar with the disaster response measures.

4.5.4   Data from Security manager and security officers

1. Security staff training in disaster preparedness

All security staff indicated that they had undergone training in disaster management.

When probed about the areas of training in disaster management the officers stated the

following as areas of training:

- "First Aid"

- "Evacuation"

- "Fire Extinguishing"

- "Theft detection"

2. Training on disaster preparedness in library.

Three out of the eight respondents stated that they have undergone training in disaster

preparedness in library while five said that they have not undergone training in disaster

preparedness in the library.

When probed further the respondents indicated that they have undergone training on:

people evacuation; first aid; fire management.

4.5.5   Data from operations manager and operation officers

1. Strategies in place for management of disasters in libraries

The Operations Manager and Operations Officers were asked whether their office has

any strategies in place for management of disasters in the University Libraries. Out of

the 15 respondents under this category, six stated to having strategies in place for

disaster management in the University Libraries. The other nine stated that they are not aware of any strategies in place for disaster management in University Libraries.

The following are strategies in place as cited by the respondents:

"Training of staff, conducting audit trails of disaster equipment"

"Performing fire drills"

"Maintenance of fire extinguishers"

"Training of fire marshals, ensuring that fire exists are always clear and unlocked"

Monitoring of power connections, checking of pipe leakage"

"Performing audit trails of CCTV's, smoke, detectors, fire extinguishers, training of fire marshals".

2. Training on Management of Information Materials

The Operations officers were asked whether they have undergone training on taking care of information materials from disasters. Out of 15 respondents 9 (60%) respondents stated that they have never undergone training, 6 (40%) stated that they had undergone training on handling of information materials in event of different types of disasters among the areas they cited to have been trained in included floods and fires. When probed further on their capability of recovering information materials in electronic or digital form, none of the respondents reported capability to salvage information materials in digital media.

4.6   CHALLENGES FACING DISASTER PREPAREDNESS

4.6.1   Challenges cited by University Librarian and library assistants

- "Inadequate reading space for library users"

- "The Library building in most campuses, except for Meru and Mombasa campuses, were not specifically built for library functions"

- "Inconsistent fire drills – which are performed only when there is CHE inspection"

- "Most campuses do not have library staff trained in fire marshalling and first aid".

- "Not all library staff are trained on disaster preparedness"

- "The university lack proper disaster management on electronic information materials"

- "Emergency exits are too narrow in libraries in some campuses"

4.6.2   Challenges cited SLA and LA

- "Lack of proper construction standards to house the operations of a library"

- "Lack of adequate training on disaster planning and preparedness"

- "Lack of budget allocation for disaster planning and preparedness"

- "Lack of training on disaster management on electronic information"

- "CHE is not strict on disaster preparedness within the library premises"

- "Lack of enough fire exits in-case of a fire outbreak"

- "Not all library users are aware of disaster response procedures"

- "Understaffing in the library"

- "Inadequate storage equipment for books, periodicals and electronic information materials"

- "Lack of sound policies on disaster planning and preparedness"

4.6.3 Challenges cited by Security Manager and Security Officers

- "lack of enough security officers compared to the population in the institution"

- "Inadequate funds"

- "Lack of modern disaster management equipment to deal with electronic information materials"

- "The security guards/watchmen are not fully trained on handling disasters"

- "Poor drainage system resulting to flooding"

- "Poor construction of some buildings"

- "Unreliable elevators"

- "Staff turnover requiring frequent trainings"

- "Poor communication. We are hardly informed when we have new staffs"

4.6.4 Challenges cited by Operations Manager and Operation Officers

- "Inadequate funds"

- "It is difficult to take students roll call in the event of a disaster"

- "There is no curriculum for disaster management training for KeMU"

- "No proper coordination between the academic department and the operations department on developing training programmes for disaster management"

- "Poor response to training by the KeMU community members"

4.7 RECOMMENDATIONS

The recommendations proposed by the respondents are as follows:

4.7.1 Recommendation by University Librarian and Assistant Librarians

- "There should be a budgetary allocation"

- "Training should be done frequently/ consistently"

- "Librarians should be involved in future planning of library reconstruction"

- "Adopt modern equipment for disaster management"

4.7.2 Recommendation by Senior Library Assistant and Library Assistant

- "Offer frequent training to all staff members and users"

- "Have a proper planning for disaster with top management"

- "The library should launch a campaign to sensitize management the need for a sound disaster planning and management programme"

- "A proper audit be done on all library resources to identify their nature/formats to help identify their specific disaster planning and management needs"

- "Create more wider emergency exits"

- "Proper ventilation"

- "Set aside budget for disaster planning"

- "Adopt modern equipment for disaster management"

4.7.3 Recommendations by Security Manager and Security Officers

- "Training of both staff and students on disaster management"

- "Management to allocate funds for modern facilities that assist in disaster management"

- "Building standards should be adhered to when constructing"

- "All departments should have a proper way of allowing communication to reach to everyone"

- "Audit trails to disaster equipment should be done regularly"

- "Acquisition of modern equipment for disaster management"

- "Security personnel should be increased to provide adequate services"

4.7.4 Recommendations by Operation Manager and Operations Officers

- "Enough funds should be allocated to the disaster management activities"

- "Mechanisms should be put in place to ascertain the number of users within the building"

- "Creating awareness to staff on disaster planning and preparedness"

- "Introducing disaster planning and preparedness in the academic curriculum"

- "Disaster planning and preparedness activities should be included in the staff manual during induction"

CHAPTER FIVE

SUMMARY OF RESEARCH FINDINGS, CONCLUSIONS AND

RECOMMENDATIONS

5.1 SUMMARY OF RESEARCH FINDINGS

5.1.1 Research Question one: what are the main activities conducted in KeMU library.

- acquisition of information materials

    KeMU library plays a vital role in assisting the university to fulfil its basic functions. By collecting and making available for use, books, manuscripts, journals and related materials, a rationally equipped university library is indispensable for the transmission and advancement of knowledge. There can be no teaching and no research worth the name without well stocked libraries. Students have to use them to argument their knowledge, teachers to enrich their instructions and research workers to persue their investigations

- Dissemination of information materials

    Dissemination of knowledge is one of the cornerstones of civilization. Development and use of Information Technology (IT) enables KeMU libraries to offer their clientele not only the appropriate resources available within their own libraries but also to provide access to information in other libraries, both local and farther afield. In this age, there is a greater responsibility on the part of the library and information centers to provide the latest and most timely

information to their users to facilitate improvement in the quality of education in the country.

- Processing and Organizing of information materials

  Even though one of the main goals of KeMU library is dissemination of knowledge to support education and research, they cannot abandon their roles as a place where different information materials are processed and organized to enable proper maximization of information resource. The materials are catalogued and classified to their relevant subjects.

- Enforcing security of information materials

  KeMU Library plays an important role in documenting and validating information materials within its environs. It provides shelves and cabinets to keep information materials. The library has security machines in some of the campuses to avoid sneaking out of information materials without the due process of having the material.

5.1.2 Research Question Two: What disaster planning and preparedness strategies are in place for protecting information materials in KeMU library?

The KeMU library has in place the following strategies to protect both its paper and electronic information materials:

- User sensitization on protection of information resources through user education mechanisms like user inductions and public notices.

- Staff capacity building on strategies for protecting information resources from all causes of disasters. Providing training to library staff on how to deal with fire

in-case of an outbreak. The training provided though does not include electronic information materials; hence this becomes a problem in dealing with the disasters on electronic information.

- Installation of disaster prevention and response utilities across the library network like fire extinguishers, anti-virus software, burglar proofing. The types of fire extinguishers in place at the KeMU libraries include carbon dioxide gas, water cylinders and foam cylinders. Due to design of library buildings in Nairobi, Nyeri and Nakuru the fire extinguishers are wrongly positioned to come in handy in case of any emergency.

- Documentation, communication and enforcement of disaster management procedures and plans covering the entire library network within KeMU.

5.1.3 Research Question Three: How adequate are the physical facilities and equipment for mitigation of disasters at the KeMU library?

- All libraries at KeMU are installed with all types of fire extinguishers. These include water cylinders, powder foam cylinders, carbon dioxide gas and horse reels.

- All libraries at KeMU have storage equipment including shelves and cabinets for safe keeping of paper and electronic media. Books and paper based information materials are stored in open shelves within the library reading areas while the electronic information resources for example CD ROM, Diskettes, are kept on small cabinets in staff offices.

- Libraries at KeMU are all connected with computer systems for the storage and safe keeping of electronic information. Each library in the campuses has back-up systems to store information resource. The libraries have clients machines to enable staff execute their duties of monitoring the flow of information within the library premises, discharging and receiving of information materials within the library.

- Some libraries lack security systems for detecting the movement of books out of the library premises for example Nyeri Library, while Nakuru library security systems is not in order. The security systems to check on the proper discharge of information materials within the library lacks in Nyeri, while Nakuru's system is not working this problem may encourage stealing of information materials by the users.

- Most libraries at KeMU lack CCTV's systems apart from Nairobi campus. The CCTV system is lacking in the other libraries because most of the libraries in those campuses are hired and hence the university fears investing technologically on the premises.

Discussion/ interpretation of Findings

The findings of the study with regard to disaster planning and preparedness at KeMU libraries revealed deficiencies in the libraries in relation to disaster management. For instance, out of 15 of the SLA and LA interviewed, 10 (66.68%) said their libraries are not adequately prepared for disasters. Out of the eight Security Officers interviewed, 87.5% (7) were not sure of who developed the disaster management plan at KeMU. In

addition, 50% of the Operations Department's staff interviewed were not fully aware of the provisions of the disaster management plan.

These findings therefore reveal inadequacies in disaster management at the KeMU libraries. The findings reflect the observations made by Hlabaangani and Mnjama (2008) that most information centres lack disaster preparedness plans, had inadequate policies and procedures, ill-equipped staff on disaster management, and absence of conservation and restoration facilities.

The findings also revealed inadequacies in the existing disaster preparedness plans. For instance, the feedback from respondents indicated that the disaster plans in place do not sufficiently cater for electronic and digital information resources. This is despite the fact that KEMU libraries have heavily invested in electronic information resources. The plans only support information resources to the extent that they cover physical security and disasters like fire and floods. However they do not make provisions for technical disasters like computer viruses, hacking, cracking and even environmental factors affecting electronic media.

The installation of adequate disaster response equipment was equally wanting. For instance only out of the five libraries sampled, only three had smoke detectors, only one had fire proof safe, only one had computer backup. This reveals poor planning on the side of the University management. It reveals inadequacy in business system analysis before deployment of the systems. Despite all the five universities sampled having

automated library systems in place, only one had a backup system. This means in event of a system crash for those without backup, all the data will be lost, resulting to enormous losses and huge costs for reconstruction of the databases. This reveals insufficient system analysis, design and development during automation.

All these findings reflect observation made by kornelija petr in the Croatian experience 1991-1995, he stated that unlike countries frequently affected by natural disasters, neither the country of Croatia nor its libraries were prepared for the scope of aggression and destruction which was engendered. Libraries and other cultural institutions were destroyed or damaged; the flow of information and materials was halted or hampered; book stocks were depleted; library staffs were reduced due to the movement of women from the war zones; working conditions were extremely difficult. There were no clear guidelines about what to do. However, in spite of all of this, libraries proved to be invaluable sources of comfort.

Myers(1993) accepts that organizations are not prepared and he agrees that this tendency to give short shrift to disaster planning is a common one, observing that when the economic climate is favorable, contingency planning is last on the list of things to do, when profits are down, contingency planning is the first item to be cut from the budget.

5.1.4 Research Question Four: How well are KeMU library staff prepared in disaster planning and preparedness?

- All library staffs have undergone some level of preparation in disaster management. This has been through academic training and on-the-job training (in-house and external).

- Formal training of staff in disaster planning and preparedness has been attained through special units during the staff academic training, which are personal and individual initiatives of the staff, outside the University system. Nine out of the fifteen library staff reported to have been trained on disaster during their academic training.

- In-house training and sensitization of staff on disaster planning and preparedness covers all staff including those who have already attained academic training on disaster. The in-house training is designed to orientate staff to structures of disaster planning and preparedness (DPP) within the KeMU libraries. This internal training is designed and delivered by the KeMU Security Department.

- There is also external training offered to all KeMU staff including the library staff, by consulting experts in security and disaster management issues. The external training is done by Jolemac Fire Protection Limited.

- Training programmes on DPP are not consistent. For instance, fire drills are only conducted when "there is an inspection by Commission of Higher Education". This is unpredictable and can be in once in two or three years.

- The study revealed that the on-job-training programmes are general in nature and not specifically tailored for library staff and library resources. The focus is mainly on protection of human life and property in event of disaster. The external training offered by Jolemac is specifically focused on fire and on issues like first aid, evacuation, fire extinguishing and theft detection. The staffs are not well prepared for other causes of disasters like biological agents.

- The KeMU library does not have its own in-house programme for training staff on library-specific disaster mitigation strategies. Consequently, the library relies on the Security Department for training staff, whose training is inconsistent and general. There are no plans to develop a DPP and general library disaster training for staff by the Library. No library staff has been sponsored for any expert training on DPP for libraries.

- Library staffs responsible for electronic information resources rely on the IT department to safeguard these resources from e-disasters like viruses. The staffs are not trained on technical aspects of protecting e-resources like installation firewalls and other control mechanisms.

Discussions/ interpretation of findings

The findings of the study with regard to disaster management in capacity building at KeMU libraries revealed deficiencies in the libraries in relation to disaster management. For instance, out of 15 of the SLA and LA interviewed, (6) 40% said that they have not undergone training in disaster management. Out of the eight Security Officers interviewed, 63% (5) stated that they have not undergone training in disaster

preparedness in library and the remaining 37% (3) who had undergone training stated that they have no idea on how to salvage information materials in digital form. In addition, 60% of the Operations Department's staff stated that they have never undergone training on disaster planning and preparedness, while the 40% of the operations who had some training on disaster planning and preparedness had no idea on how to salvage information materials in electronic or digital form.

The library top management is not aware as to the exact number of library staff trained in disaster planning and preparedness within the organization, the management gave conflicting number of staff while one respondent stated that the training is only done when the Commission of Higher Education inspection is about to visit the organization. Most of the SLA's and LA's reported only knowing to operate the horse reel, water pipes, gongs and electronic bell but had no idea on how to operate the carbon and foam cylinders within their premises.

These findings therefore reveal inadequacies in disaster management at the KeMU libraries. The finding reflects survey of disaster management in academic libraries in Ghana carried out by Akussah and Fosu (2001) revealed that there were varying levels of disaster preparedness by libraries. Their study further revealed that libraries were characterized by lack of disaster plans, inadequate human and material resources, and lack of conservation workshops to restore damaged information materials. Akussah and Fosu findings were not in any way different from that of McCree (2000) who found out that the plan which has not been implemented and without trained staff would be

ineffective in the event of a disaster. There is no use to have all the fire fighting facilities without the staff knowing how to use them. In the event of fire, they would not know what to do, instead of being panic. Training of staff in fire awareness, sounding the alarm, evacuation procedures and in the use of fire extinguishing equipment is also very important.

The findings concurred with the findings of Kabelo, Hlabaangani and Mnjama (2008) with the extent to which employees working in information centers know about disaster preparedness and planning. The study discovered that some of the information centers had not trained their staff on disaster preparedness. Staff training is a crucial aspect of disaster preparedness plan. Since these information centers did not have operational disaster plans, they did not have anything to guide them on training. Those information centers with draft disaster plans were not in any way better prepared for disasters.

The findings reflect the observations made by UN/ISDR (2007) that most organizations are overwhelmed by the disaster due to insufficient disaster response capacity, unclear command, unclear control structures and lack of information from affected areas. This amplifies the lack of consistent on audit trails at KeMU libraries where by audits of equipment to ascertain the safety of library materials are done once in a year by the vetting of the Nairobi city council. This means that in case of an equipment malfunction due to several factors within the premises after the inspection by Nairobi city council, then that equipment will not come in hand in case of a disaster within the library.

5.1.5 Research Question Five: what are the problems that may hinder disaster planning and preparedness in the libraries?

- Most library buildings in KeMU are not in conformation with the standards of a library, the building housing the libraries in Nairobi, Nyeri and Nakuru were constructed for other business purposes.

- KeMU libraries lacks consistent fire drills, fire drills are done only when there is an inspection by the Commission for higher education so in-case of a disaster in the library premise the staff might encounter difficulties in dealing with the situation.

- Not all library staffs have undergone training in disaster management. A number of library staffs have undergone training in their academic programs while a few have undergone training while on the job. The library department should undertake to all its staff across the university to enable them have the skills and knowledge in-case of a disaster.

- The university lack proper disaster management on electronic information materials. The university apart from having software to counter attack the viruses within the library network lacks proper modern equipment to deal with other forms of disasters like fires and floods in electronic information materials.

- Emergency exits are too narrow in libraries in some campuses. Apart from Meru and Mombasa libraries that were constructed to specifically accommodate the library, the rest of the libraries have narrow emergency exits which in itself is a disaster in waiting.

- KeMU libraries apart from Meru campus lack enough storage equipment and space which results to mechanical destruction of information materials, exposure to biological agents since some of the information materials are kept on the floors and audit of information materials is a problem because information materials are not arranged in a proper manner. They also lack fire proof cabinets for the storage of vital information in the library in-case of a fire outbreak.

- The library department lacks policies that deal with disaster planning and preparedness. Consequently, the library staffs have no documented framework within which to enforce disaster mitigation strategies. Enforcing compliance to disaster mitigation standards is equally difficult, since the standards are not document in any policy framework. Procedures for DPP on non-fire hazards are also not provided. Staffs are therefore not clear on how to protect library resources from hazards like biological and environmental agents. This makes it difficult for the library staff to take actions to plan and prepare for disasters since any action must be informed and justified within a policy framework. Actions taken outside policy guidelines attract disciplinary measures, which undermines deliberate efforts to safeguard library resources even if they are professionally acceptable.

- CHE is not strict on disaster preparedness within the library premises. They make recommendations that are never adhered to by the institutions. I may say they are lenient.

Discussions

The study revealed a number of challenges among the respondents most being common problems while others are departmental problems, among the challenges stated were both organizational and technical.

5.2   CONCLUSION

KeMU libraries were not adequately prepared for protecting information materials against disasters, most of the campuses in one way or another had deficiencies in their operations. The Library Department did not have adequate procedures for disaster plans and preparedness for identifying the existing preventive and preparedness procedures, the library lacked written procedures and hence incase of any risks in the library then staff members would be forced to start from scratch in dealing with any emergency within its environs.

Documented plans are paramount to any library and this may enable libraries to respond quickly and efficiently to disasters, mitigating risks to staff and damage to library materials and property.The library does not hold regular fire drills within its premises and hence incase of any emergency the authorities and the users will be at stake in trying to evacuate from the premises, holding regular evacuations is paramount to an institution of KeMU's status.

The Library lacks sufficient staff with disaster management skills and knowledge, the institution do not perform regular first aid training to its staff and hence it becomes a challenge when dealing with a high number of people in case of an emergency within

the library premises. Everybody who has a role to play in the preventive and preparedness phase should be identified and their responsibility clearly stated.

5.3   RECOMMENDATIONS

5.3.1 Disaster planning and preparedness strategies.

1) The Library department needs to have policies and procedures in place for disaster management. The policies should be approved by the highest authority in the University. Librarians should design and implement disaster plans and these plans should be reviewed and tested regularly. The policies, procedures and plans when put in place will help KeMU have details of preventive and preparatory measures intended to reduce potential risks, and which also indicates reactive and recovery procedures to be taken in the event of a disaster in order to minimize its effect.

2) The university should construct library specific buildings. The librarians should be included in the plans of a library construction. This will help to provide the management with proper accepted regulations and standards of library designs.

3) The Library Department should be allocated budget for disaster planning and preparedness. This will ensure that the library has authority on the services and equipment to acquire in order to deal with emergencies, risks and disasters. The Library can allocate some funds for training of its staff and library users on disaster management.

4) A proper audit should frequently be done on all library resources to identify their nature or formats to help recognize their specific disaster planning needs. This will help to ensure that all library equipment are functional and can come in handy when need arises.

5.3.2 Physical facilities and practice in place for mitigation of disasters for information resources

1) The Library Department in conjunction with the Security and Operations Department should conduct fire drills consistently within the premises. This will ensure that fire drills are done often to check on the people's response to disaster and the efficiency of emergency exits within the buildings.

2) The Library needs to increase on storage space and acquire safety equipment such as fire proof cabinets, lockable drawers for the storage of information materials. This will prevent information materials in the library from mechanical destruction and exposure to biological agents, stealing and fire outbreaks.

3) The Library Department should install security systems like 3M systems and CCTV's in all libraries. This will prevent loss of information materials through stealing and mutilation.

4) The Library should ensure that up-to date anti-viruses software are installed in all machines on the network to help protect electronic information materials from viruses. The library needs to use firewalls to protect intruders from having access to information on the network without authority.

5.3.3 Capacity building on disaster management at KeMU Library

1) The Library Department should conduct frequent training on disaster management to all library staff. This will enable them to have technical know how to operate the equipment like fire extinguishers, horse reels and the gongs within the library in-case of a disaster.

2) The library should train staff on protection of electronic information materials on all causes of disasters. This will ensure that the staffs are well familiar with the ways and methods of dealing with electronic information materials in-case of a disaster. The staff should be in a position to safe guard electronic resources such as computers, CD's, diskettes.

3) The Library Department should sensitize the staff on how to deal with biological agents of disasters. The staff should be trained on the methods of dealing with termites and ants when they invade information materials within the library.

4) The Library Department should ensure that staffs are trained to deal with floods. The department should train staff to salvage information materials submerged in water and the methods to recover them.

5) The library department should also ensure that staffs are trained to deal with acts of war and terrorism. With the increase in insecurity in the country, terrorist may use bombs and other equipment to attack the library and this needs the library to train two or more staffs in different campuses on how to deal with this kind of a disaster when it strikes.

6) The library should also train its staff on what they should do in-case there is a power failure within the premise. Power failures have always been the causes of fires in most places and hence the library staffs need to be trained on how to deal with such a disaster. They should know how to switch of the power systems within the library and to evacuate people in-case of a disaster.

5.4   SUGGESTIONS FOR FURTHER RESEARCH

5.4.1 Training Curricula for Library Disaster Management

There is need to conduct research to determine what an effective disaster management training curriculum for libraries should cover. Such a study will help in ensuring that training programmes for disaster management in libraries cover essential areas that relate directly to libraries and their collection.

5.4.2. Disaster Response and Recovery for Libraries

A lot of disaster management strategies focus on general enterprise-wide hazard mitigation. However a library is one of the unique entities in an organisation. Whereas it may be easy to establish response and recovery mechanisms for other functions, the library's uniqueness demands clear identification of the exact actions to be taken to respond to disasters within it. For example, whereas water can be used to extinguish fire, the same may not be necessarily effective in a library in view of its collection. Therefore research is essential to recommend specific actions to be taken to respond to disasters in libraries and how to recover including restoration of information resources.

5.4.3. Disaster Management for Electronic Information Resources

Electronic information resources present unique challenges in disaster management. Whereas e-resources are affected by virtually all disasters affecting paper-based resources, they also have their own unique sources of problems. It is necessary to conduct further research and recommend how librarians can deal with specific e-resource-based disasters to ensure most effective disaster mitigation for e-resources.

5.4.4. Physical Planning for Libraries

Further research is required to identify and recommend the best structural and physical design of library buildings in consideration of disaster management. Many academic institutions are setting up the libraries in storied buildings, which present challenges during disaster response. There is need to conduct study to identify the best possible way to handle disasters in libraries in high-rise buildings. There is also need for such study to establish whether the traditional approaches to construction of library repositories are still applicable in present times. It could also identify emerging technologies of constructing libraries to provide the best of disaster management to the library resources.

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APPENDIX 1

INTERVIEW SCHEDULE FOR UNIVERSITY LIBRARIAN, AND ASSISTANT LIBRARIANS

My name is Vincent K. Tanui I am a Master of Philosophy student in Information Sciences Library and Information studies option at Moi University, conducting a research on disaster planning and preparedness in libraries at the Kenya Methodist University. This is in partial fulfillment for the requirements for Master of Philosophy Degree in Library and Information Studies.

The study aims to investigate disaster planning and preparedness at the Kenya Methodist University Library and make appropriate recommendations to strengthen them.

The information that you will provide will be treated with utmost confidentiality.

SECTION I: BIODATA

1. What's your position at the university?

2. Which campus do you work for?

3. How long have you worked for KeMU?

SECTION II : DISASTER PLANNING AND PREPAREDNESS STRATEGIES

4. Are there any existing disaster management plans at the KeMU library?

5. Does your department have a budgetary allocation for disaster planning and preparedness?

6. What disaster strategies are in place for information materials in your library?

7. Do you have any physical facility in place for disaster mitigation for information resources, property and people?

8. How often do you conduct audits to ascertain the safety of library building and materials?

9. Do you often perform fire drills in your library?

10. Is the building housing the library in conformity with the library construction standards?

SECTION III: DISASTER MANAGEMENT CAPACITY BUILDING

11. Are your staffs trained in disaster preparedness?

12. What is the mode of Training and how often is it done in the Library?

13. What criteria do you use to select staff to undergo training?

14. Is there a specific person in charge of training staff in disaster preparedness?

SECTION IV: CHALLENGES FACING DPP

15. What are the challenges encountered in the library.

SECTION V: RECOMMENDATIONS

16. What suggestions would you like to make to improve disaster planning and preparedness in the KeMU library?

APPENDIX 2

INTERVIEW SCHEDULE FOR SENIOR LIBRARY ASSISTANTS AND LIBRARY ASSISTANTS

My name is Vincent K. Tanui I am a Master of Philosophy student in Information Sciences Library and Information studies option at Moi University, conducting a research on disaster planning and preparedness in libraries at the Kenya Methodist University. This is in partial fulfillment for the requirements for Master of Philosophy Degree in Library and Information Studies.

The study aims to investigate disaster planning and preparedness at the Kenya Methodist University Library and make appropriate recommendations to strengthen them.

The information that you will provide will be treated with utmost confidentiality.

SECTION I:BIODATA

1. Which campus do you work for?

2. For how long have you been working in the library?

3. What qualifications do you hold in the information/ library discipline?

SECTION : BUSINESS PROCESS ANALYSIS

4. What duties do you carry out in the library?

SECTION III: DPP STRATEGIES

5. Do you think your library is well prepared in the event of a disaster?

6. Do you know where firefighting equipment is located in the library?

7. Have you ever participated in fire drills in the library?

8. What kind of fire-fighting equipment do you have in your library that can assist in disaster management?

9. Are you aware of systems and structures for disaster planning and preparedness at KeMU?

SECTION IV: DISASTER MANAGEMENT CAPACITY BUILDING

10. Have you undergone training in any aspect of disaster management?

11. Did your academic or professional training at the university involve disaster management?

12. Are you equipped with sufficient skills for mitigating disaster on electronic resources?

13. Are your library users familiar with disaster response measures?

14. Has the university, in your view, done enough to prepare for library disaster?

SECTION V: CHALLENGES ENCOUNTERED IN THE LIBRARY

15. Has there been any form of disaster in the library?

SECTION VI: RECOMMENDATIONS

16. What in your view, could be contributing to exposure of library materials, staff and property to disasters?

17. What suggestions would you make to improve disaster planning and preparedness in your library?

APPENDIX 3

INTERVIEW SCHEDULE FOR SECURITY MANAGER AND SECURITY OFFICERS

My name is Vincent K. Tanui I am a Master of Philosophy student in Information Sciences Library and Information studies option at Moi University, conducting a research on disaster planning and preparedness in libraries at the Kenya Methodist University. This is in partial fulfillment for the requirements for Master of Philosophy Degree in Library and Information Studies.

The study aims to investigate disaster planning and preparedness at the Kenya Methodist University Library and make appropriate recommendations to strengthen them.

The information that you will provide will be treated with utmost confidentiality.

SECTION I: BIODATA

1. Which campus do you work for?

2. What position do you occupy at the university?

SECTION II: BUSINESS PROCESS ANALYSIS

3. How long have you worked for KeMU?

4. What is the mandate and activities of the security office?

SECTION III: DISASTER PLANNING AND PREPAREDNESS STRATEGIES

5. Do you have a disaster control plan for KeMU library?

6. Has there been any disaster threat in the library in the past?

7. How often do you evaluate or review the facilities for disaster mitigation?

8. Does your department conduct fire drills?

9. What physical facilities do you have in place for disaster preparedness?

10. Does your department have a budgetary allocation for disaster planning and preparedness?

11. Are there any strategies you have in place for disaster management in the university library

SECTION IV: DISASTER MANAGEMENT CAPACITY BUILDINGS

12. Have you been trained in disaster preparedness?

13. Are you familiar with the physical layout of the library building?

14. Do you conduct audit to ascertain the safety of library building and materials?

15. Are there programs for continuous capacity building for KeMU community on disaster management?

16. In case of a disaster, do you have emergency contact numbers to facilitate rescue operations at KEMU?

17. Does the security office conduct any training of library staff on disaster planning and preparedness?

18. Are there programs for inducting new staff and students in the university include disaster preparedness?

SECTION V: CHALLENGES

19. Has your office recorded any disaster occurrence in KeMU libraries?

20. What challenges does the security office face with regard to disaster planning and preparedness at KeMU?

SECTION VI: RECOMMENDATIONS

21. What suggestions would you make to improve disaster planning and preparedness at KeMU?

APPENDIX 4

INTERVIEW SCHEDULE FOR OPERATIONS MANAGER AND OPERATIONS OFFICERS

My name is Vincent K. Tanui I am a Master of Philosophy student in Information Sciences Library and Information studies option at Moi University, conducting a research on disaster planning and preparedness in libraries at the Kenya Methodist University. This is in partial fulfillment for the requirements for Master of Philosophy Degree in Library and Information Studies.

The study aims to investigate disaster planning and preparedness at the Kenya Methodist University Library and make appropriate recommendations to strengthen them.

The information that you will provide will be treated with utmost confidentiality.

SECTION I: BIODATA

1. Which campus do you work for?

2. What's your position at the university?

3. How long have you worked for KeMU?

SECTION II: BUSINESS PROCESS ANALYSIS

4. What's the mandate and activities of the operations office?

SECTION III: DPP STRATEGIES

5. Is there a disaster management plan at KeMU?

6. Are there any strategies you have in place for disaster management in the university's libraries?

7. How often do you conduct audit for physical facilities for disaster mitigation?

8. Does your department have a budgetary allocation for disaster planning and preparedness?

SECTION IV: DISASTER MANAGEMENT BUILDING CAPACITY

9. Are there programs for continuous capacity building for KeMU community on disaster management?

10. Are you trained to take care of information materials?

11. Are you familiar with the physical layout of the library building?

12. How do you conduct audit to ascertain the safety of library materials?

13. Does the operations office conduct any training of library staff in disaster planning and preparedness?

SECTION V: CHALLENGES

14. Is there a trend in occurrence of a particular form of disasters at the university?

15. What challenges does the operations office face with regard to disaster planning and preparedness at KeMU.

SECTION VI: RECOMMENDATIONS

16. What suggestions would you make to improve disaster planning and preparedness at KeMU?