

UNIVERSITY OF NAIROBI

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

**IMPACT OF INFORMATION MANAGEMENT SYSTEMS IN DISASTER
MANAGEMENT: A CASE OF RELIEFWEB**

BY

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**A Project Report Presented in Partial Fulfillment of the Requirements for the Award of the
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DECLARATIONS

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

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Professor Edward K. Mburugu, University Supervisor

DEDICATION

This project work is dedicated to my husband, John, who has been a constant source of support and encouragement during the season of graduate school. I am truly thankful for having you in my life. This work is also dedicated to my mum who has loved me unconditionally and has taught me to work hard and never to give up.

I would also like to dedicate it to my beloved children, Jasmine, Janice, Claire, and Emmanuel. You are my inspiration.

Lastly, but not least, to my Lord Jesus, whose grace constantly amazes me.

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ABSTRACT

Information plays an important role in almost every human activity. There is a common saying, “information is power”. This is more apparent during a disaster or a crisis, where the availability and dissemination of information determines life-saving activities.

This study looked at the processes of information management (collection, processing, analysis and dissemination and archival) of information and how this aids in humanitarian response to a disaster. Specifically, the study was designed to determine the impact, if any, of ReliefWeb in disaster management, with a special focus on the drought in Kenya 2014-2017. ReliefWeb is a specialized integrated services offered by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) to give information as when humanitarian crises occur.

The objectives of this study were to identify ReliefWeb users and establish the extent to which they made decisions based upon the information ReliefWeb provided. The study also sought to establish the reliability of ReliefWeb to its users.

Reviews of relevant literature focused on definition of information management in terms of knowledge management and management information systems. It also examined humanitarian information management and the process on sharing information in disaster management. The study also examined previous evaluations of other Information Management Systems.

Qualitative and quantitative data was obtained from forty five humanitarian workers from different United Nations agencies, Non-Governmental organizations, and donor community. Questionnaires, key informant interviews and reviews of relevant documents were used to collect the data. The qualitative data was analyzed using thematic categorization. Descriptive statistics was used for quantitative analysis with the measure of frequency used to generate relevant percentages and frequency counts. In addition, the researcher had an interview with an editor from ReliefWeb to gain an understanding of how the website functions.

Key findings showed that there are more users satisfied with the information from ReliefWeb than those dissatisfied. User registration was however cited as tedious since it did not incorporate options to integrate with popular tools like Gmail or Facebook. By providing evidence and new ideas, ReliefWeb act as a catalyst in influencing program and policy improvement. It also establishes a level of attribution towards making decision directly through activities and outputs of information intervention especially on complex matters such as drought.

The study recommends that ReliefWeb should incorporate options to integrate its user registration with popular tools like Gmail or Facebook; It should identify its users changing information interests, especially the need for changing information type with the recent growth in the need for data as opposed to prose; It should also make their website multi-lingual whereby the content is available in more than one language, thereby increasing the diversity of the audience and lastly it should be at the forefront of technological advancements to ensure they are relevant in meeting the needs of the user.

CHAPTER ONE

INTRODUCTION

1.1 Background Statement

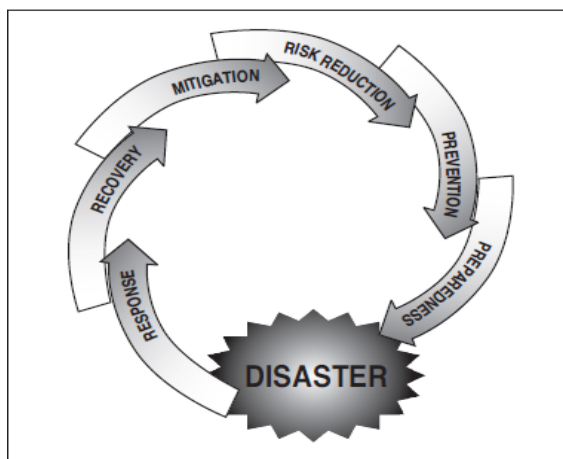
Disasters occur regularly worldwide. Every year, different types of disasters occur in East African region. They include conflicts, floods, flash floods, landslides, mudslides, and drought. The U.N global strategy for disaster recovery (2009) defines disaster as a major disruption of how a community conducts its activities through involving human, economic and environmental losses which might exceed people who are affected to cope with such situations with the help of their own resources. Wattegama (2007) describes natural or man-made hazard that could lead to suffering of affected individuals or creates needs in a setting whereby victims cannot meet them without external aid.

To offset the adverse effects of a disaster on humankind, governments set up policies, guidelines, and practices of disaster management. U.N global strategy for reduction of disaster (2009) describes management of disaster using two namely: disaster risk management and disaster risk reduction. Disaster risk management is described as a process that uses administrative decisions to set and implement policies, strategies and capacity to cope with communities to mitigate effects of disasters and emergencies. This constitutes of all activities that mitigate any adverse impacts of hazards. Disaster risk reduction comprises of the conceptual outline of elements that are used in the context of sustainable development to mitigate society exposure to emergency, as well as avoid and regulate the detrimental effects of disasters.

According to Wattegama (2007), disaster management encompasses the following cyclic activities; minimization, risk reduction, prevention, preparedness, response and recovery. He argues that mitigation is aimed at minimizing any chances of risk taking place or a threat

turning into a disaster. Reduction is risk should be successfully managed by anticipatory measures and actions which prevent future risks due to a disaster. Prevention involves avoidance of a disaster, preparedness are plans which are put in place to save lives and property and aid an organisation to respond efficiently in operations. Response involves all the activities that are carried in case of a disaster so as to save lives and property including the environment. Actions plans are applied during response and recovery is done to help the society recover and get back to normalcy after a disaster. These 6 phases might overlap.

Figure 1.1: The Disaster Management Cycle - Wattegama (2007)



In reference to NPDMK (Ministry of State for Special Programmes, Office of the President (2009), Kenya's face several disasters which are widely dominated by floods, droughts, epidemics and terrorism. Kenya has continued to face exposure to disaster due to increased risk of diversity due to natural causes and other manmade disasters that has affected communities leading to loss of property, lives and displacement.

On February 2017, Kenya government declared national drought emergency, and out of 47 counties in Kenya, 23 were affected.¹ In an effort to respond to these kinds of disasters, there was rapid information flow in order to save lives, alleviate suffering and minimize economic losses. Systematic collection of information based on the magnitude, effect and disaster frequency is a critical tool for donors, governments, and humanitarian organisations.

With the proliferation of what is now termed as “fake news”, responders, need to be able to acquire information that is trustworthy and reliable to enable them to make the right decisions in their humanitarian response activities.

Globally, initiatives are being put in place to collect and information on disasters and associated losses. The main goals of these initiatives is monitoring losses from disasters and susceptibility to develop evidence through resource allocation and pushing for disaster mitigation approaches, programmes and action plans. This is part of information management approaches that are utilized for managing disasters.

1.2 Information Management in Disaster Management

When disaster strikes, reliable information is required urgently. How well information is managed in the different levels of managing disaster namely minimization, reduction of risk, prevention, preparing for risk, responding and recovery, influences the success of a disaster. Before a disaster strikes, information used to guide all activities of planning that assist humanitarian aid agencies to get ready for any disaster that may arise.

¹ <http://www.president.go.ke/2017/02/10/government-declares-drought-a-national-disaster/>

Putnam (2002) states that during and after a crisis takes place, reliable information is required to find out an effective and efficient response, and inform the public about the disaster and the approaches put in place for recovery and deterrence of emergencies.

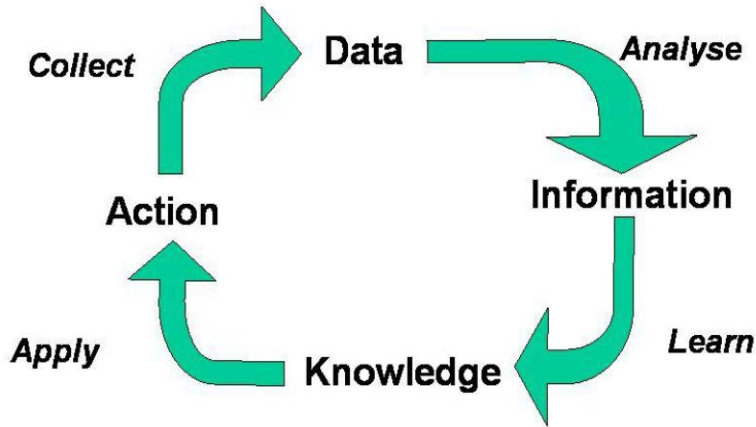
Humanitarian workers need continuous access to reliable information to better understand crises or disasters in order to make decisions. Having an information gap can be detrimental to the process of managing disasters. The term ‘information management’ in the humanitarian response context can be understood as a multistep process that consists of data collection, processing, analysis as well as dissemination, with the goal of enhancing the manner in which humanitarian communities operates in a humanitarian crisis. According to Putnam (2002), web-based information services can be especially useful.

Choo (2002) explains that creation of information, its acquisition, storage and use offers a basis to support growth of organisations. He further argues centralized players of information management ought to be users of information themselves. Managing information should aim to address situational contexts and information use and thus give meaning and purpose to information among users who are involved in making sense of a situation.

According to UN Office for the Coordination of Humanitarian Affairs (2011), Information management is an all-encompassing term for a process that takes data in many different forms and transforms it into the information and knowledge needed for planning and implementing humanitarian action. As the diagram below illustrates, the process also encompasses a series of actions made up of technical and non-technical tasks. It is important to understand that the process is a continuous cycle of action; the humanitarian response environment is constantly changing, and the information needs of humanitarian actors change with it. The imperative to ensure that information is as accurate and up-to-date as possible

means a continual return to the data collection stage to verify existing data and identify new data needs.

Figure 1.2: Information Management Cycle - OCHA (2011) : Paul Curriion



Data are the raw results from assessments, measurements or observation. Data can be quantitative (measurable) or qualitative (descriptive), but both need to be considered as ‘informative’. Data, on its own, is often difficult to absorb and it is the role of an information manager to turn data into usable information.

Information is data that has been processed or analyzed in some way, to ensure that the data become meaningful and can assist decision-makers in developing an informed strategy. Knowledge is the meaning of information. Knowledge is the combination of the information provided and background information on similar situations to interpret the meaning of the information. Action is the stage at which decisions are taken, knowledge is acted upon.

According to Tad and Janardhanan (2014) information plays a central role towards empowering people who are involved in cases of disasters at different levels. Important and timely information is needed in disaster preparedness and situations. Disaster managers information needs can broadly fall in three categories namely pre-disaster, during disaster and post-disaster activities. Pre-disaster activities entail research, assessing risk, prevention, mitigation and preparedness. Post-disaster includes activities such as rehabilitating,

responding and reconstructing. Disaster related data is classified into: Pre-disaster data, handling of information on emergencies and post-disaster data on disaster impact resources allocated to deal with this emergency. Thus, managing information during disasters is a critical element in disaster response. An information repository service is instrumental in disaster management particularly in gathering and circulating information resources. Tad and Janardhanan (2014) maintains that cross-sectoral alignment of information helps a leader to design sound management decisions.

1.3 ReliefWeb

ReliefWeb (reliefweb.int) is a portal for humanitarian information integrated online and designed to deal with global humanitarian community to deal with emergency cases efficiently. This portal real information on how humanitarian crisis take place while laying much emphasis on forgotten emergencies. The portal is intended to ensure that ReliefWeb is a hub for international humanitarian community. This portal was established in 1966 by UN office to coordinate humanitarian activities (OCHA) through extensive agreements on the need to have a clearing house for humanitarian information to allow decision makers at the headquarters and on the ground, to make decisions from an informed position.

ReliefWeb was designed by the U.N General Assembly in 1977 Resolution 51/194 that stated that *“General Assembly argued the Secretary-General to design ReliefWeb as an international humanitarian system for disseminating timely and reliable information on calamities and emergencies, and to encourage all governments, United Nations Agencies, for funds and programmes including other important institutions as well as NGOs to support ReliefWeb and to take part in exchange of information via Humanitarian Affairs Department”*.

According to Google Analytics, more than 6,8 million users visited the portal in 2017 which now hosts an excess of 500,000 humanitarian reports (situational), evaluation, policy, press releases, infographics and maps. ReliefWeb provides a complete repository and archive of information from different humanitarian organizations. It also provides a listing of job vacancies and training opportunities in the humanitarian sector. This service is provided on an online platform on their website reliefweb.int. Mobile applications and Application Program Interface (APIs) are also available to users by ReliefWeb.

ReliefWeb largely depends on information that is contributed by various organisations such as NGOs, governments, UN agencies and media. It also publishes situational reports, appeal, examination and lessons learned, manuals including vacancies for jobs and training courses that seek to benefit humanitarian community. ReliefWeb is recognized based on a certificate of superior achievement in Global Emergency Information Management (January 1999) from U.S government.

1.4 Statement of the Problem

Putnam (2002) puts a lot of emphasis on the need to enhance communication and creating complex information environment. Information management before, during and after disaster have a direct effect on effective crisis management

Weisæth et al. (2002) state that research on communication during times of crisis or disasters show that as much as 70 to 80 per cent of all problem-solving activities involve some form of communication. According to Hagar (2012), during a crisis or a disaster, some of the information challenges that can come up include an overload or a lack of information. As the different actors involved produce more information, coordination of this information also taking into consideration the changing information needs at various stages of a crisis; can create information ambiguity and conflicting information making it difficult to get the 'right'

information to the ‘right’ person at the ‘right’ time. Hagar (2012) continues to state that information and communication technologies (ICTs) have changed the face of managing information in disaster management. New and existing information and communication technologies increasingly enable the capture and storage of information generated during disaster situations. With advances in information and communication technologies vast amounts of information accessed easily and simultaneously by large audiences. As crises unfold, ICTs enable events to be communicated around the world almost instantaneously.

Amin & Goldstein (2008) state that “Information management systems are a critical element of effective response capacity.” When responding to a disaster numerous challenges arise in information management, for example, tracking the vulnerable populations; logging infrastructure damage; logging of humanitarian supplies; and coordinating the work all the responding agencies to avoid duplication of response. Essential information is controlled by many autonomous actors, who may be working together for the first time. Developing systems that enable the information to be shared and understood in order to have a targeted response is central to building better response capacity.

Gathering of information during disasters is crucial in understanding the impact of the disaster. According to Choo (2002), the process of gathering information requires that an organization continuously plans, innovates, and evaluates its sources. With planning comes with identifying the target audience for data and how they could use this information. The availability of varied sources of information provides a bigger scope, thus higher potential for innovation. Information management is heavily dependent on collaborative efforts and sharing of information and vigorous participation of stakeholders, including humanitarian workers, government agencies, and affected populations. According to Pan American Health Organization, PAHO (2009), it is important for organizations that the information in disaster

situation is obtained from multiple sources to widen the scope of understanding the nature of disaster. The type of data collected should be relevant to disaster response strategies and bodies that deal with similar situations.

Putnam (2002) talks about “questionable content” whereby in the process of sharing information, misinformation can spread. In a crisis, the circulation of unproven or outdated information is common. In already chaotic situations, access to voluminous webpages can be overwhelming for emergency responders. When time is limited or when there is an error in data filtration, there can be more complexity than understanding of a situation. For this reason, the need for a reliable information management tool in disaster management.

When responders are able to access correct and timely information, the response to the disaster is efficient and lives are saved. Archival of the same information ensures that there are resources that can be used during early recovery and disaster preparedness later. The challenge is to show how information can make response to disaster more effective while improving the quality of life of those affected at the same time. Is information management a key element in mobilizing resources, support, and increasing visibility of a disaster?

The world is facing enormous and multiple disasters such as food insecurity in north-east Nigeria, Somalia, South Sudan; protracted crises in the Democratic Republic of Congo, the Lake Chad Basin, Syria, Yemen. On February 2017, the government of Kenya declared a national drought emergency². With technological advances humanitarians should be able to offer a timely response, but are the various information management systems available capable of offering this role?

² Ibid., 2

ReliefWeb has the mandate to fill this information gap, at least in part, by collecting, processing, analyzing and disseminating information in disaster response, and create a vast archive to enable humanitarians review past disasters and responses and apply lessons learnt. However, there has consistently been a demand for more information and delayed response is usually attributed to lack of reliable information. Therefore, this study seeks to fill-in the knowledge gap by investigating the impact of ReliefWeb as an information management tool in disaster management, with a special focus on the Kenya 2014-2017 drought.

1.5 Research Questions

The research was guided by the following questions:

- i) How is information managed in disasters and crisis?
- ii) What are the successes and failures in managing information in disaster management?

1.6 Objectives of the Study

1.6.1 Main Objective

The main objective of this study is to determine the impact of ReliefWeb to humanitarian response in disasters and crisis.

1.6.2 Specific Objectives

The specific objectives of this study are:

- i) To differentiate types of ReliefWeb users and responders in disasters and crisis.
- ii) To establish the extent to which responders made decisions based upon the information ReliefWeb provided.
- iii) To establish the reliability of ReliefWeb to users.
- iv) To certify whether the scope of information offered by ReliefWeb meets user needs.

1.7 Significance of the Study

To humanitarian responders;

Humanitarian responders are always looking for more effective ways of assisting the affected. By studying an information management system, they may expand and improve the methods that they have previously used in disaster management.

To Researchers and Academicians

Given that there are limited studies that link information management with humanitarian response, the outcome of this study will provide useful knowledge and also act as local reference on information management for future research.

1.8 Scope and Limitations of the Study

The conceptual scope of this study lies in establishing the linkages between ReliefWeb service and humanitarian response. The study looks at the processes of information management (collection, processing, analysis and dissemination and archival) of information and how this aids in humanitarian response to a disaster. As of the contextual scope, the study targeted the humanitarian response to 2014-2017 drought in Kenya. To counteract non-response and lack of co-operation from the humanitarian communities during data collection, the researcher broadened the number of respondents.

1.9 Assumptions of the Study

The respondents will accord due support to the researcher and uphold high integrity of truth.

1.10 Definition of Terms

- **Crisis** or **emergency** is a threatening condition that requires urgent action. UNISDR (2009)
- **Humanitarian(s) - Person(s)** who work in organizations mandated to improve the lives of people affected by a disaster or crisis.
- **Response** – Refers to implementation of counter strategies after the occurrence of a disaster. Such strategies are inclusive of, but not limited to saving lives and rebuilding of essential facilities.
- **NGO** - Non-Governmental Organization
- **UN** – United Nations
- **UNOCHA** - United Nations Office for the Coordination of Humanitarian Affairs

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section looks into secondary and primary sources of data in existing pieces of literature on disaster management. The sources are primarily peer reviewed journals, books, and conference proceedings that involve bodies that focus on disaster management such as the United Nations in sections where data is unavailable in academic literature.

2.2 Literature Review

A literature review on information and disaster management could be problematic due to the interdisciplinary nature of the subject. Information management looks into computer systems and means by which data can be used to the advantage of an organization while disaster management looks into how an organization can predict disasters before they occur and control their effects once they occur. The information provided on these two topics also focus on individual companies, thus making unbiased information difficult.

2.2.1 What is Information Management?

Choo (2002) describes information management as a cyclic process that guides an organization through its learning activities. The primary role of information management gathers data on the organization's resources and the limits of its capacities for strategic adaptation to the environment.

Quoting Davenport (1993), McGee and Prusak (1993) state that six distinct, but related information management processes may be discerned. These processes include identification of an organization's information needs, acquiring, organizing, storing, developing products, distributing, and utilizing the information. Rowley (1998) presents four categories of

information management: (i) information retrieval, (ii) information systems, (iii) information contexts, and (iv) information environments.

According to Schlogl (2005), many authors associate the beginning of information management back to the Paperwork Reduction Act in 1980. The act required United States federal agencies to introduce information resource management. He classifies information management into two general categories; content and technology-oriented. Technology-oriented information management covers the availability of needed information against the time it is needed. In this case, computer systems will ensure the right information is made available when it is needed.

Content-oriented information management is closely related to library science and records management. It focused on information content. In the field of library science, information management is identified with users whose view of information takes into account the data, the organization, external information resources and their associated technology. Wilson (2002). Information management is therefore about the information, its structure including metadata and quality. This view encompasses technology, process and people, content. Because this view has a focus on provision of external information, Kuhlen and Finke (1988) assert that external information is more valuable in guaranteeing an organization its success. Choo (2002) backs this argument up by stating that the success of a company depends on how efficiently an organization gathers and analyzes information about its environment.

Pee, & Kankanhalli (2009) have a different view. Their focus on information management targets human beings and how they manipulate technology to process input and give viable output. Conclusively, information management should be directed on how people use it in reality rather than the predictions in computers.

According to UNOCHA (2011), information management is an umbrella term for a process that takes data in many different forms and transforms it into the information and knowledge needed for planning and implementing humanitarian action.

2.2.1.1 Knowledge Management

Wilson (2002) defines knowledge management as the means through which an organization shares knowledge and information across their systems. Systems in this case focus on computer and work place practices.

According to Dongsong Z. et al (2002), knowledge management is the complete analysis, understanding, and utilization of information given on disaster for the purpose of improving humanitarian work. Knowledge management process determines information that is needed and oversees its acquisition and distribution. Improving knowledge management assists decision-makers in doing their job better, faster, cheaper, and also enables people to share and reuse different resources. It therefore contributes to the success of real-time decision making.

Murphy and Jennex (2006) states that a knowledge management system aids users in identifying, retrieving, using, and sharing the knowledge they need. According to Otim (2006), these systems are crucial for detection of disasters, and disaster management by helping in early warning and assist decision-makers in disaster response and recovery. Accessing and utilizing past knowledge can speed up the process of disaster response and recovery.

2.2.1.2 Management Information Systems

According to Lucey (2005), the term management information systems (MIS) is a concept that has helped organizations grow even before the implementation of computers in management strategies. Before computers, management relied on manual filing of

organizational documents. Computers, however, according to Rego (2001), caused a spike in interest in MIS because it eased data processing and added new field of interesting career options in MIS. Computers have simply made the process of documenting faster and less tedious. People can now access information at the click of a button. The advancement in computers have made analysis of data more convenient and reliable for decision making due to the elimination of human error and the availability of information.

2.2.1.3 Humanitarian Information Management

According to the Inter-Agency Standing Committee (IASC) Task Force information management workshop (2011), Humanitarian Information Management (HIM) can be defined as a systematic process within which data is collected, processed, verified, collated, and analyzed prior to its distribution to humanitarians. The purpose of this process is to ensure quality data is given within time for humanitarian activities.

When quality information is combined with the expertise of humanitarians, then knowledge is produced. HIM is undertaken during all the phases of disaster management.

2.2.2 Information Management in the Disaster Management Cycle

The overall goal of disaster management is to ensure that during a disaster, lives, environmental, and economic losses are kept at a minimum. Data on disaster management will commonly focus on the territory, the type of disaster expected and in what intensity, projection of timelines, and viable counter measures based on the local population. The Pan-American Health Organization, PAHO (2005) states that the efficiency of humanitarian work is dependent on the organization's capacity to collect, analyze, and disseminate information. Stolzenburg (2007) argues that data is irrelevant if not supported by other ways through which disasters can be stopped. Information simply gives variables that could be useful in a

decision-making process. In that light, decisions heavily depend on the types of systems that are implemented on the receiver's end.

Dorosamy and others (2013) maintain that complementary factors do not need to be technological. However, they affect how information is manipulated during a decision-making process. Further, implementing of decisions made needs to be accompanied by knowledge and proper management of information. Knowledge and information management is meant to guide an organization in creating, capturing, coding, storage, and application of knowledge within different branches of an organization). Knowledge management is currently evolving from written material into digital material. This evolution guarantees the exploration of multiple fields in the operations of an organization. For instance, knowledge management has made disaster management easier through projection of forecasts and the areas they are likely to affect. Consequently, populations that are likely to get affected by disaster are evacuated in advance.

Rego (2001) explains that information in disaster management falls into two categories. 1) pre-disaster activities which focus on research and evaluation of current trends and information on disaster. This information is used as a pivotal point of predicting and preparing for future disasters. Preparations include means of preventing the disaster and controlling it once it happens. 2) post-disaster activities which focus on responses to disasters, rehabilitation of the effects, and reconstruction of communities back to their former states where improvements cannot be made. These processes require leaders to make reliable decisions on how to handle disasters based on knowledge related to topologies and populations in high risk regions.

2.2.3 Information Sharing in Disaster Management

Maldano, Maitland, and Tapia, (2009) outline the importance and challenges of collaboration in terms of information sharing when one is faced with response to disasters. They do not focus on the issues of disaster relief in multi-organizational environments but instead focus on multi-level governance. They use the case of Hurricane Stan which hit Central America in early October 2005 to show the advent of the National Emergency Response Collaborative. This was an online tool that allowed all members such as NGOs and the national government to share information. This online tool ran on among others, the principles of cooperation, capacity strengthening and expressive space. This tool emerged from the Information Technology for Emergencies Alliance group, which consists of seven large NGOs. They argued that when the results of this transparency proved to be mutually beneficial, organizations willingly collaborated in sharing their information. In disaster management, this transparency of information in a timely fashion can save lives, and the non-governmental organizations mission should be to achieve just that.

2.2.4 Evaluation of Information Management Systems

Rossi and Freeman (1993) define evaluation research as the systematic analysis of social programs with the aim of taking informed actions and improving the process of decision making. Springett (2010) defines this process as the means by which researchers and educators assess the validity of programs that are likely to change the nature of a society. Patton (2008) describes this process as the means through which researchers collect and assess data around a program. This research primarily focuses on ways of improving a society and ways through which the programs could be improved to cater for the needs of a society.

Information is one of the most essential bit in an organization. Most people will relate it to its use in electronic devices, but information goes beyond the limits of computer systems. Remenyi et al. (1997) suggests that Information plays a vital role in the life of an organization since it is the basis of decision making by managers. In the current era, the globe is experiencing constant changes in technology and manners in which organizational operations are handled. The constant changes have formed a basis of management information systems (MISs) which aids managers in running organizational operations. Despite the vitality of information, there are occasions where wrong information is provided, even with the use of the MISs. For this reason, managers are expected to rely on their experience and knowledge to discern reliable from imperfect information. Accountants within an organization are often tasked with communicating both financial and non-financial details to the organization's managers and stakeholders. These parties monitor the performance of the firm and make informed changes on areas that need improvement. For this reason, an accountant needs to give the right information, using the right format, and within the right timeframe for the success of the organizations in which they work.

Lancaster (1997) believes in the establishment of benchmarks to evaluate the performance of any program based on its current operations. Further analysis of the program would be done against libraries and services that already exist in the same line. Lastly, this information could be used to justify the existence of the implemented program. Such evaluations bring I changes like just-in-time services that ensure a service caters for the needs of a group when it is needed. Just-in-time is a practice that allows for a company to implement better inventory principles. It has proved to be more effective, less expenditure is expected, and a company becomes more responsive to client.

Performance improvement activities are humanitarian related programs that aim at improving selected aspects of an organization's social practices. The information system programs are implemented in stages in order to guarantee the achievement of maximum improvement in provision of healthcare services to the community. De Lone and Mc Lean (1992) lists six main stages; information quality ; information manipulation; user satisfaction,; individual influence; and lastly organizational. These steps boost the quality of services through learning and adapting from the shortcomings of its initiatives. The plan and do stages refer to implementation of an earlier improvement initiative. The study and act stages refer to the evaluation of the results of a previous initiative, learning from its shortcomings, and implementation of a subsequent initiative to arrest these areas.

McElroy (1989) stated that researchers challenge evaluation processes of information-based services that focus on transactions, arguing that quantitative data alone cannot provide an accurate picture of the impact, quality, or effectiveness of the interaction. He discussed problems associated with performance evaluation and noted: "a single performance can have an effect on several people within the community; and that intangible benefits are not captured in such a simple approach".

Menou, M.J. (2000) in a research to find the link, if any, between information and development. The research aimed at examining the role of information and the use of electronic networking in sustainable development, and information policies for electronic networking. The framework methodology of this pioneering 1992-2000 research identified four stages in the evaluation process: (i) Preparatory steps: (ii) Planning and design: includes: identifying objectives; (iii) Monitoring and measuring; (iv) Communicating the results.

According to Middleton (2002), website evaluation though influenced by the purpose of the site, uses the criteria itemized as follows: **Functionality, Authority, Validity, Obtainability, Relevance, Substance, and Readability**

Some of the issues to be checked when evaluation the functionality of a website includes, active links - Do any of the links fail to work? Is there a reliable search engine, can material be retrieved from the site? When evaluation whether the website is authoritative, some of the questions that need to be answered are; Does the organization manage the site? Are there parties that claim responsibility for the content posted on the site? Is content edited and vetted before it is presented to the public? Has the site existed long enough to attract traffic? The validity of these questions is based on the awards the site receives, reference of content by other parties, and the use of numerical data to back up data used on the site. To test the obtainability, some of the questions to be answered are; Is the site free or are there fees? How is it to trace the URL and domain name by the users? Does the site use password protection? Currency or an indication of when it was last updated or how frequently it is updated is also checked.

When evaluating a website for substance, issues checked include accuracy of information is and period of information coverage. For readability the grammar is checked for errors. Lastly, as a community-based organization, it should constantly improve its user interfaces and reliability aspects. Reports indicate that in the process of service delivery, errors that might result in either the return of users or the complete lack of traffic on a site. The former could be attributed to poor planning and system failures. Therefore, constant investigation into causes of such cases should be conducted in order to improve patient confidence in the healthcare provider.

According to Alexander, J. E and others (1999), there are five traditional criteria that were rendered effective in assessing the quality of printed data in physical libraries that can be effective in analyzing web resources.

Criteria 1: Accuracy, which distinguishes error from fact.

Criteria 2: Authority, which determines the authorship of a website.

Criteria 3: Objectivity, which determines the objectivity of a website. It also looks at cases of prejudice and bias.

Criteria 4: Currency, this checks when the website was last updated.

Criteria 5: Coverage, which determines the extent to which information is sufficiently covered.

2.2.5 Case Study

Real studies are difficult to come across since they focus on the reality of disaster. However there are some examples of post-hoc evaluations, but few of impact studies, and even fewer where the methodology and process have been set up in advance.

2.2.5.1 Evaluation of PreventionWeb

One such evaluation is by Information Technology and Agricultural Development (ITAD) of PreventionWeb (PW) (www.preventionweb.net) contracted by United Nations Office for Project Services (UNOPS) and United Nations Office for Disaster Risk Reduction (UNISDR) in 2012. This analysis revolved around information services from UNISDR and the intensity of their effectiveness in disaster management. The measure of effectiveness was done against the strategies' ability to cater for an organization's disaster mitigation proposals. The most effective services were those that responded to existing and new disasters.

A theory of change (TOC) approach was adopted for the evaluation. The approach used PreventionWeb as its preferred information provider and as a knowledge broker to provide long-term changes in disaster management. The information provider was equipped with necessary technology to take in data, process it, and provide simulations that project the nature of disasters, and the amount of change that the solutions for these disasters could make. According to Weiss (1995), TOC works on the basis of a set of presumptions that focus on long-term strategies that could provide the best outcomes throughout a disaster period. Conclusively, TOC is a goal setting strategy that creates a clear link between organizational goals and the activities that it partakes.

Evaluation focuses on three key: Impressions and attitudes that users have towards the interface. In this case - PreventionWeb's usability and functionality; The degree to which PreventionWeb has been effective in meeting managerial needs and wants – PreventionWeb's effectiveness and impact since its launch; and, how best PreventionWeb evolves to get to bigger audiences while looking into their static needs – PreventionWeb's role going forward within the broader evolution of the Disaster Response and Recovery field.

2.3 Theoretical Framework

The main purpose is to explore some theories and models relating to information management. They are presented to provide a theoretical background for this study. The concept of information management in disaster management can be explained as meeting an information need in society during times of disasters.

The theories in this research provide the researcher with theoretical terms to explain and understand events of the study. The human needs theory, systems theory and empowerment theory are selected as they allowed the researcher to assess their applicability to ReliefWeb's performance.

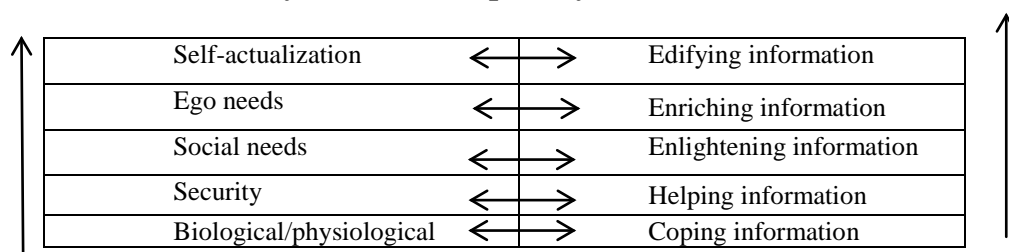
2.3.1 Human Needs Theory

Needs-based motivation theories revolve around the fact that human beings are constantly driven by the desire to attain a need. Information needs on the other hand focus more on problems and means through which solutions can be met. Cole (2002) describes the stages as those of an individual being confronted with a problem which lead to realization of a gap in the knowledge base which can be resolved by an intermediary intervention providing information.

According to Abraham Maslow, human behavior is governed by a hierarchy of needs. These needs, from lowest to highest level are, physiological, safety, social, esteem, and self-actualization. Before a person proceeds to a higher stage, the need to fully satisfy the stage within which they reside. For instance, one can only focus on their safety once their physiological needs are well met.

Horton (1983) used Maslow's theory in information systems to classify the existing variety of projects. At the lowest level of his hierarchy is coping information, then helping, which naturally feeds into educating, enlightening, and lastly edifying information as shown in the figure below.

Figure 2.1: Maslow's Hierarchy of Needs Adapted by Horton (1983)



At the bottom of the hierarchy, coping information is used to establish and use information resources to cope with day-to-day challenges like securing enough food, shelter, and health care, helping information by emergency services, community groups and organizations; enlightening information involves seeking information on how to be happier and interact with

the community and neighborhood; enriching information by professional services to help the ego; and edifying information seeking moral and spiritual uplifting.

In looking at information management during disasters, the model may be used without necessarily retaining its notion of hierarchy, because the kind of information provided required by different people differs. For example, the information required by the beneficiaries may be coping information, while that required by the donors could be enriching information that helps them too understand how their donations have helped the beneficiaries. Lack of information may expose responders and communities vulnerable to injury, death, disruption and other adverse effects of disaster.

2.3.2 Systems Theory

Systems theories focus on interdependence and complexity. A system is composed interdependent groups of activities or parts that form whole.

According to Luhmann (1986), the social systems theory is founded on the construct of autopoiesis. Autopoiesis from two Greek words, autos and poiein that mean self and to produce respectively. Autopoietic systems therefore reproduce themselves from within themselves. Communication is an essential element to this theory. Further, Luhmann suggests that societal reproduction is fully dependent on communication. Once information is produced and shared, it creates a network out of which the shared information cannot exist. Communication is the unity of “utterance, information and understanding”. Conclusively, a society will have varied means of communication to which only those that are familiar can understand. Each social system consists of countless meaningful communications. Essentially, communication is based on both observation and the assessment of how social systems operate.

In information management, communication of the situation even as it continually changes are at the core of its function. During disasters especially, communication is the lifeline that is used both by donors and affected communities to ensure that the society is able to understand the situation and overcome challenges posed. It makes sense to have a system of gathering, collating and availing information from various sources to ensure that the system of managing disasters is fully aware of the situation. In this way, information management is able to provide a forum for “utterance, information and understanding”

According to Infante (1997), systems are grounded on objects which can either be abstract or physical; attributes which are a wholistic representative of all elements of the system; internal relationships which dictate how objects interact; and the surrounding which is the space within which a system exists. Give these facts, a system can be defined as a set of factors that work co-dependently to create patterns that work uniquely to attain a goal. The openness and closedness of these systems fully depend on the input data, the command process, and the required output. A cold system is infamous for vanishing because it has no interaction with its environment and does not receive information. An open system on the other hand is likely to survive and prosper because it receives information and uses it to interact with its environment.

According to Simonovic (2015), systems are founded on both structural and nonstructural elements that work collaboratively to reach an objective. These systems are constantly fed resources, data and energy that vary depending on a task. In cases of disaster management, these systems are allocated based on cost and benefits, investigation of alternatives available to reduce damages, and greater engagement with stakeholders in the decision-making process. Conclusively, systems approaches can be a viable means of countering and managing disasters.

ReliefWeb as an information management tool falls squarely as an open system as it receives information and interacts with the hundreds of agencies in the humanitarian sector. This way, the humanitarian systems is engaged a process of sharing information during disaster responses. The systems put in place to gather and share information can affect how well organizations are able to respond to a disaster. Different humanitarian organizations can be seen as diverse systems that interact by sharing their information.

2.3.3 Empowerment Theory: The Wisdom of Collaboration

Rappaport (1981) defines empowerment is a process that sees individuals and societies taking power in order to grow and fully control their political, social, and economic environment. The empowerment process is engaged in activities that build up assets both at individual and community level therefore improving efficiency and fairness of the organizational context on how these assets are used.

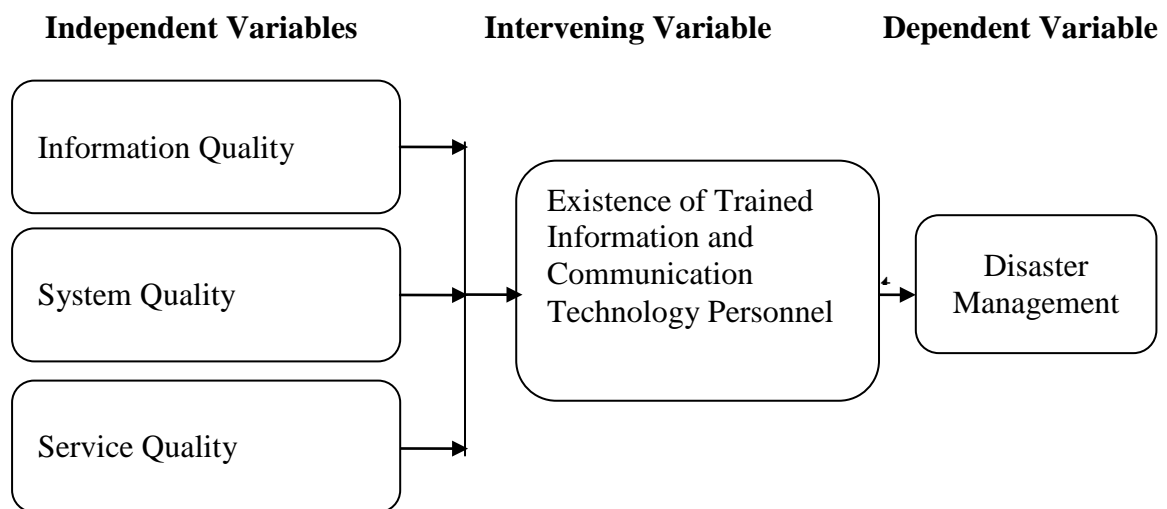
McClelland (1975) suggested that power lies in the majority. However, for them to take on the power and use it, they need to be conversant with their environment and work as a team around the challenges they encounter. Wallerstein (1992) also contributes to the concept of empowerment. He defines empowerment as a social-action process that draws people to work together for their personal and societal growth. This state can only be achieved once social justice and political efficacy are attained.

The concept of empowerment within the context of information management in disaster management can be seen when there is a collation of information from different independent sources and availing it freely to all people. In collaboration by different agencies, all organizations are empowered by placing them in a level platform thereby ensuring that all parties involved in managing a disaster are well represented and all voices are heard ensuring better management of the disaster.

2.4 Conceptual Framework

Conceptual framework is an analytical diagram which shows the relationship between the dependent and the independent variables. According to the conceptual diagram presented in figure below, the independent variables are information quality, system quality and service quality while the dependent variable is disaster management. These three quality dimensions of Information management affect the information interchange amongst humanitarian agencies. This in turn affects the effectiveness of the usage of such information which ultimately determines the level of understanding of a disaster and assistance delivered.

Figure 2.2: A Conceptual Framework of independent and Intervening Variables that Positively Impact on Disaster Management



System quality is measured by the desired characteristics of technology which are usability, reliability, availability, adaptability and response time. Information quality measures the appropriateness of the web content which should be personalized, complete, relevant, and easy to understand. Thus, users should find it easy to find updated content and return to the site on a regular basis.

Service quality measures the overall support delivered by the service provider.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section analyzes the research methodologies that came in handy in the evaluation of the study. This section gives information on research objectives and means used to reach the objective. The research scope is also clearly stated. Based on the results obtained, the data analysis designs used, data representation and collection methods are fully justified. Conclusively, this provides a basis against which the thesis statement can either be nullified or considered viable for the study.

These tools used to gather data are interviews, questionnaires and reviews of pertinent documents. Both questionnaires and interviews were used to elicit data from users. Sampling techniques, data collection and analysis and ethical considerations have been included in the research design. All methodological elements have been chosen specifically to address the purpose of this study, which was to evaluate ReliefWeb as an information management provider in disaster management.

3.2 Site Description

The study sites for the study were the offices of the humanitarian organizations, all of which are in Nairobi, Kenya. These sites were purposively selected based on the categories of potential audiences identified among the many groups that could provide or be interested in the relevant data of this study. I) Non-governmental organization (NGO): According to the NGO co-ordination board of Kenya strategic plan (2014 – 2017), there are over 8,500 registered non-governmental organizations in Kenya. II) United Nations agencies: The United Nations Information Center lists forty-three UN agencies in Nairobi, and III) Donor agencies. Key informants in the study were also selected from the same organizations.

The researcher selected the organizations based on a track record in implementing and donating towards humanitarian projects in Kenya.

3.3 Research Design

Gorman and Clayton (2005) define research design as the overall strategy chosen to incorporate all the different elements of the study in a comprehensive and logical way, hence ensuring the researcher is able to address the research problem effectively. It is the blueprint of the methodology and the procedures that are used to collect and analyze the data needed by the researcher.

According to Saunders et al (2003), a descriptive survey method looks at a phenomena with intense accuracy and then describes exactly what the researcher sees at the moment. He continues to say that descriptive research design describes the characteristics of a problem. Questionnaires and interviews are the methods used to obtain information in a descriptive research. The research design for this study is descriptive study and it describes role played by ReliefWeb in disaster management.

3.4 Unit of Analysis and Units of Observation

Unit of analysis is assessing the impact of information management systems in disasters and crisis response.

Units of observation are the employees in the disaster response departments in humanitarian organizations, dealing with the Kenya drought response programme.

3.5 Target Population

Target population as the group of people from which a sample can be drawn for the purposes of a research. The study will focus on users on ReliefWeb. The target audience of ReliefWeb

is people working in the humanitarian sector at United Nations, non-governmental organizations and other international organizations, and donors.

Specifically, the study will target employees in the disaster response departments in humanitarian organizations, dealing with the Kenya drought response programme. Key informants in the study are the managers from the same organizations.

3.6 Sample Size and Sampling Procedure

Non-probability sampling was used to obtain the sample for this study. The researcher targeted non-governmental organizations that have a track record in implementing humanitarian projects in Kenya utilizing data from questionnaires and interviews to collect input from audience groups.

In this regard, purposive sampling method in some instance and random sampling in some clusters of target groups were found to be most ideal. According to Saunders et al (2012), purposive sampling is a non-probability sampling method and it occurs when the researcher uses their own judgment to choose the elements of the sample. A researchers can, by using a sound judgment obtain a representative sample, which will result in saving both time and money. Purposive sampling method was used to select four non-governmental organizations, four UN agencies and four international agencies. The selection of this was informed by the assumption that disaster management is a policy issue and should be uniform in general in humanitarian agencies. From the organizations selected, random sampling technique was considered because it has the advantage of according each element within a population an equal chance of being sampled hence eliminates bias. It was used to select the humanitarian workers in the different organizations. The selection of the individuals was from drought relief programs of the institutions. The lottery method was used in the simple random sampling technique. A unique number was assigned to each member of the population. A

paper with each of these numbers written on it was then placed in a bowl and mixed. The researcher, while wearing a blind-fold, then picked numbered tags from the bowl. All the people having the numbers picked by the researcher were the subjects for the study. Gender was not a consideration. To determine sample size, Table 3.1 was utilized.

Table 3.1: Target Population and Sample Distribution in Relief Organization

No	Name of the Humanitarian Organization	Target Population	Sample
1.	Adventist Development and Relief Agency International (ADRA) Kenya	10	5
2.	World Vision Kenya	10	5
3.	CARE International Kenya	15	7
4.	Kenya Red Cross	20	9
5.	International Federation of Red Cross and Red Crescent Societies (IFRC)	16	7
6.	United Nations Children's Fund - UNICEF Kenya	9	4
7.	World Food Programme Kenya	18	8
8.	United Nations Environment Programme (UNEP)	5	2
9.	OCHA (Office for the Coordination of Humanitarian Affairs)	4	2
10.	United States Agency for International Development (USAID)	4	2
11.	Swiss Agency for Development and Cooperation (SDC)	5	2
12.	Department for International Development - DFID	6	3
	Total	117	58

Purposive sampling was also used to select the most experienced humanitarian managers. For each of the organizations selected, one senior manager, perceived to have the most knowledge and the greatest exposure in the drought response and in utilization of the ReliefWeb portal was identified and selected to provide qualitative data through a semi-structured interview. However, the researcher was able to interview eight managers. Out of the eight, one was in person, five via telephone, while two responded via Skype. Skype is a software that enables individuals to make free video and voice calls with other people. The

roles they held at their organization varied. Two were humanitarian affairs officers, four were programme managers, a communications manager and an information management officer.

The selection of the UN agencies and NGO's was based on projects that they have listed as having implemented in assisting people affected by the 2014-2017 drought in Kenya.

3.7 Methods of Data Collection

3.7.1 Qualitative Data Collection

When carrying out an impact evaluation, using qualitative data collection methods provides information useful in understanding the processes behind the observed results. This study used semi structured individual interviews either face-to-face or through telephone interviews.

3.7.2 Quantitative Data Collection

Testing of hypothesis is key in quantitative studies enabling researchers to be able to estimate the size of a phenomenon of interest. This was done using semi-structured questionnaires (have both open-ended and closed-ended questions). The questionnaires were administered by the researcher in person where possible and made telephone interviews as an alternative.

3.7.3 Sources of Data

Primary and secondary sources of data were used in this study. Primary data was obtained from interviewing the humanitarian workers. Secondary data was obtained from published materials, journals and internet sources.

3.8 Ethical Considerations

The researcher arranged for a meeting with the human resource personnel and/or supervisors prior to the interview dates to notify the respondents of the intended study and to seek their consent for the same. By meeting the human resource personnel, the researcher was able to

create a rapport and also be directed to the person best suited to give the information required. The researcher sought consent from each interviewee and promised to ensure confidentiality of the information given by the respondents.

3.9 Data Analysis

The data was analyzed through statistical means after being edited for accuracy, uniformity, consistency and completeness. Methods such as tabulation using IBM SPSS Statistics and Microsoft Excel proved very effective for this process. The research also used qualitative data analysis methods such as semi-structured questionnaire. The qualitative data was analyzed using thematic categorization. Descriptive statistics was used for quantitative analysis. Specifically, measure of frequency was used to generate relevant percentages and frequency counts where applicable. Tables and charts were generated using Microsoft Excel are used for easier data analysis by the user.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.1 Introduction

This data was collected with the aim of establishing the extent to which information management contributes to the process of Disaster Management. Specifically, the data was to establish the extent the information portal of ReliefWeb was used in gathering information on the drought in Kenya and how this information was utilized in the response by humanitarian agencies to this disaster. The data was collected from Humanitarian agencies within Nairobi.

4.2 Response Rates

Responses from target audiences are presented in this section.

4.3 Social and Demographic Characteristics

The study targeted data from humanitarian workers. It is generally recognized that non-perceptual factors like gender, age, education, and computer usage can have a moderating effect on how one perceives technology leading to its acceptance. Given that accessing the ReliefWeb portal requires some level of technological awareness, the researcher sought to gather demographic data of the respondents and the findings are stated below.

4.3.1 Gender Distribution

Domingo (2013) says that despite many UN agencies and NGOs having expressed a commitment to gender equality, and having a Security resolution on Women, Peace, and Security ([S/RES/1325](#)) passed, women still have limited access to positions of leadership.. The numbers male respondents holding managerial positions slightly outweighed female respondents. However, those in non-managerial positions, the female respondents outweighed the male.

Gurumurthy (2004) observed that the dramatic positive changes brought about by information technologies have not impacted all of humanity. She noted that existing power relations in society determine the enjoyment of benefits from these technologies hence they are not gender neutral.

Domingo and O’Neil (2016) assert that dominant gender norms worldwide assign women domestic and caring duties and in some cases, can prescribe or discourage women from taking on leadership positions. Working in the humanitarian sector can be argued to be “caring duties” and could explain why the total number of females was greater the males. This can also explain why the managerial positions were held by a slightly higher number of male. In a longitudinal study of information technology use in the workplace, Morris, Venkatesh, and Ackerman (2005), found that gender differences in technology perceptions were more pronounced among older workers, but more uniform among younger workers. Based on their findings, they concluded that existing stereotypes portraying technology as a male-oriented domain could be disappearing; particularly among younger workers.

The researcher sought to seek if the need for information and seeking it by utilizing information technology was affected by their gender. This was difficult to prove as the gender aggregation appeared to be determined by humanitarian organizations hiring policy along gender lines.

Table 4.1: Gender of Respondents

Gender	Managerial Position	Non-Managerial Position	Frequency	Percentage
Male	5	15	20	44.0
Female	4	21	25	56.0
Total	9	36	45	100.0

4.3.2 Age Distribution

Information technology has facilitated the building of a more inclusive arena, allowing the aged, and the discriminated to communicate. This research sought to find if the age of the respondents affected how they access digital information in the disaster management process. The researcher found out that most of the respondents fell between the ages of 30-49 as indicated in the table below. This could suggest that more experienced users have a higher appreciation of the system and perceive it as particularly easy to use. This could also be because more were familiar with the ReliefWeb portal based on their awareness of the different information systems available in the humanitarian sector.

Table 4.2: Age Distribution

Age	Frequency	Percentage
20-29	9	20.0
30-39	17	38.0
40-49	15	33.0
50 and above	4	9.0
Total	45	100.0

4.3.3 Levels of Education

The researcher sought to find out if levels of education affected the way they respondents interacted with information technology in their work as humanitarian responders. Out of the 45 respondents, 22 percent indicated had Postgraduate education as their highest level of education, 69 percent indicated university education – graduate level as their highest level, while 9 percent had diploma level of education as their highest level.

Despite the different levels of education, they were all competent in digital information and had no problem in accessing the information they needed.

Table 4.3: Level of Education

Level of Education	Frequency	Percentage
Postgraduate Education	10	22.0
University Graduate	31	69.0
Diploma	4	9.0
Total	45	100.0

4.3.4 Duration Working in the Humanitarian Sector

The researcher sought to establish the duration which the respondents had been working in the humanitarian sector. This was considered by the researcher as an important indicator in this study as it informed the respondents' responses in the interview. A majority of those who had worked over 6 years in the industry had visited the website more often with an average visiting once a week. The findings are presented in the table below:

Table 4.4: Duration in the Humanitarian Sector

Years	Frequency	Percentage
0-5	16	36.0
6-9	21	47.0
10 and above	8	18.0
Total	45	100.0

4.4 Types of ReliefWeb Users in Disasters and Crisis

ReliefWeb has been in operation since October 1996 and had in excess of 6.8 million unique page visits during the year 2017. To understand more about the impact of this portal in disaster management, it is important to appreciate who its current users are, and factors that affect their levels of engagement and usage.

4.4.1 Type of Organization of Users

Questionnaires were used to collect data from humanitarian workers in the United Nations, select NGOs and Intergovernmental Organizations (IGOs), and donors. The distribution of the responses is detailed in Table 4.5

Table 4.5: Distribution of the responses

Humanitarian Agency	Frequency	Percentage
United Nations	12	27.0
NGOs/IGOs	27	60.0
Donors	6	13.0
Total	45	100.0

The selection of the number of the respondent was based on the sample size selected by the researcher (see Table 3.1) having respondents from the different spectrum could indicate a broad appeal and need for web-based resources. Interviews carried out with UN agencies, international donors, and NGO's respondents also indicated the use by the majority of individuals spoken to from similar groups.

4.4.2 Organizational Role of ReliefWeb Users

When asked what their primary role in their organization was, the respondents answers varied, with a slight majority being Desk officers/Analysts. The distribution is shown in Table 4.6 below.

Table 4.6: Primary Role in the Organization

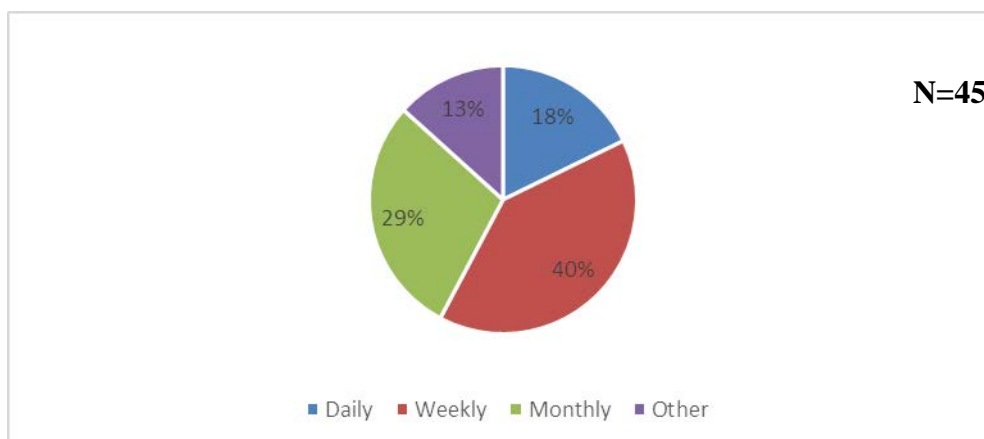
Role	Frequency	Percentage
Communications	13	29.0
Senior Manager/ Policy Maker	7	16.0
Desk Officer/ Analyst	14	31.0
Human Resources	9	20.0
Researcher	1	2.0
Other	1	2.0
Total	45	100.0

The researcher sought to find if the role played had any bearing on the kind of information sought and the frequency of access. Irrespective of the role played, a majority of the respondents sought information regarding job vacancies as shown in Table 4.8.

4.4.3 Frequency of Visit

A majority of the respondents visited the portal to access information at least once per week as shown in Figure 4.1 below. Of note was that a majority of those who visited daily were utilizing a mobile device to access the portal. They were also those who had over 6 years of experience in the humanitarian sector which could mean that the use of the portal increased the longer one was in the sector as they became more aware of the tools available.

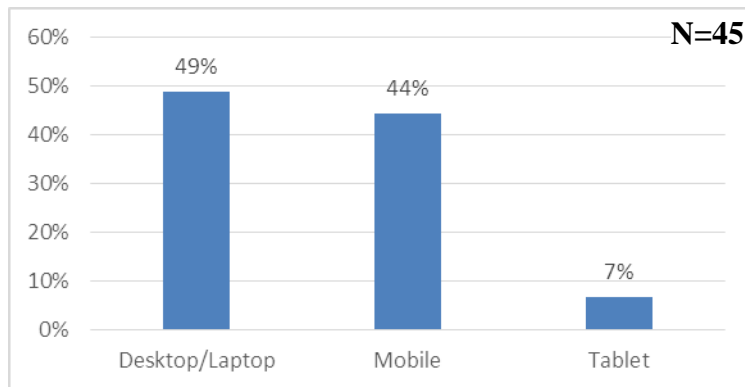
Figure 4.1: Frequency of Visit to ReliefWeb



4.4.4 Access Method of ReliefWeb Users

A majority of the respondents used their desktop or Laptop to access the website with 49% of them falling into this category. 44% of the respondents accessed the portal via the mobile phone while the rest (7%) used their tablets. The use of desktop and/or laptop may be attributed to the fact that the respondents were all working in the humanitarian sector and had been issued a desktop or laptop by their respective organizations. Increasing mobile usage could possibly be because of mobile Apps. Figure 4.2 highlights the findings of the device that users utilize to access the website.

Figure 4.2: User Devices



Given that the Apps are a fairly recent introduction to the portal, they proved to be an increasingly popular way to access the information. This can be attributed to the high usage of smartphones in Kenya. A report titled “White Paper 2017: Trends from the Kenyan Smartphone and E-Commerce Industry”, released by Jumia Business Intelligence and GSMA Mobile stated that over 60% of Kenyans have smartphones.

Since ReliefWeb offers Google analytics as a tool to analyze data on their page, page views from Kenya were among the top five countries displaying its popularity amongst humanitarian workers. Table 4.7 highlights the mode that the users utilized to access the information. While some users utilized more than one mode to access the website, the majority accessed it via the homepage.

Table 4.7: Mode of Access

Access Mode	Frequency	Percentage
Via the Home Webpage	30	46%
Through Google	10	15%
Via the Apps	15	23%
Social Media	9	14%
Other	1	2%
Total	65	100%

4.4.5 Information Sought by ReliefWeb Users

When asked what information the respondents were looking for on ReliefWeb, most of the respondents chose more than one option, with 22 out of the 45 who answered choosing that they sought information on job vacancies as shown in Table 4.8.

Table 4.8: Information Sought on ReliefWeb

Respondent's organisation	Information Sought on ReliefWeb								
	Job Opportunities	Humanitarian needs	Humanitarian financing	Training Opportunities	People in need	Gaps in meeting needs	Other	Total	
								Row Total	Percentage
NGO Total	13	6	3	4	6	7	2	41	51.0
UN Total	5	4	2	3	4	4	3	25	31.0
Donor Total	4	2	3	1	2	1	1	14	18.0
Column Total	22	12	8	8	12	12	6	80	100.0

Aid workers mainly visit the website to find information about job vacancies in the humanitarian sector. This is both to post available vacancies in their agencies and seeking employment. There was a consensus in the trust of the vacancies posted. They also visited the portal to access the latest information concerning the disasters. While NGO and United Nation workers looked for general information on the disasters, donors preferred funding information as well as humanitarian needs on the disaster. Respondents also relied on ReliefWeb to locate training opportunities in the humanitarian sector, which they considered provided the added value in career advancement.

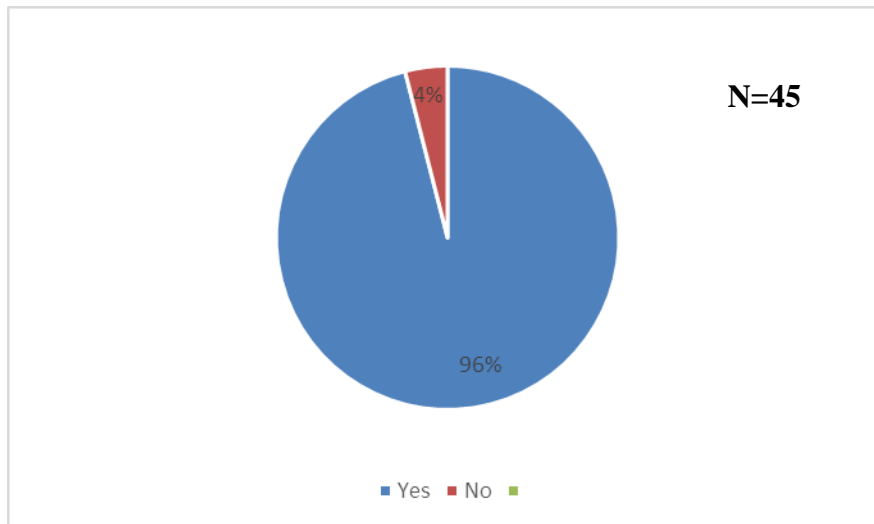
4.5 Extent of Decision-Making Based on Reliefweb Information

The researcher sought to find out if the users utilized the information on ReliefWeb to make their decision in their response to the drought. To measure achieve this the researcher evaluated the users awareness of ReliefWeb, the impact of Information they sought, what information products and sources they used, and, how reliable they thought ReliefWeb was.

4.5.1 Impact of Information on Disaster Response

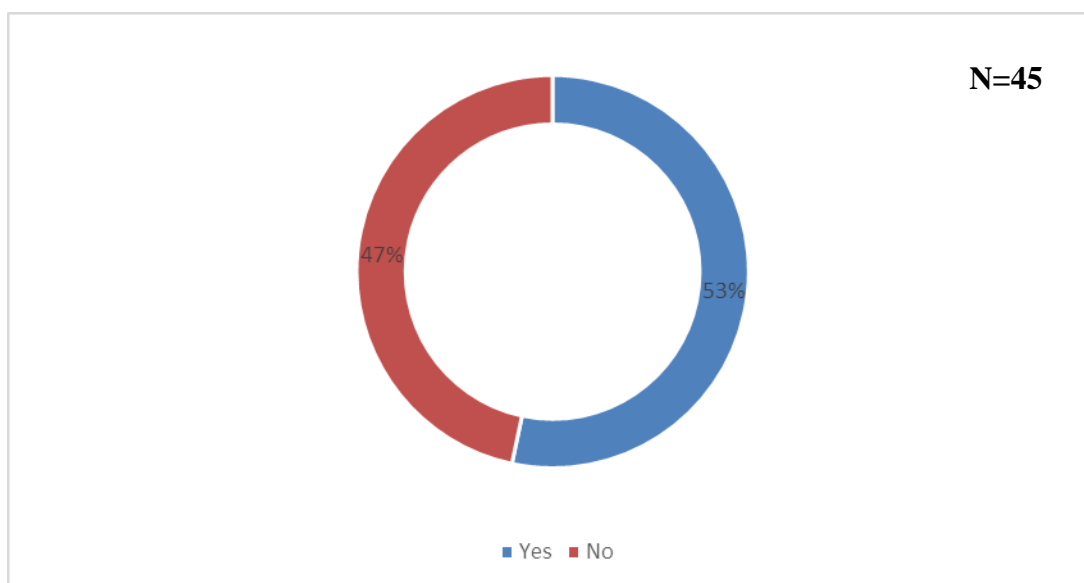
When asked if they thought that the information available on ReliefWeb improved their knowledge of the 2014-2017 drought in Kenya, a resounding 96% of the respondents agreed. However, a partly 4% did not agree as shown in figure 4.3 below.

Figure 4.3: Improved Knowledge of Disaster



When asked if the information available had led to the improvement in the response to the disaster, the results were ambiguous as shown in Figure 4.4 below.

Figure 4.4: Improved Response to the Disaster



The idea behind this measure was to assess whether there was enough information available to humanitarian workers to help them in the response to the disaster. While many were clear that their knowledge base improved, they were less sure if this had helped in the response. This could be attributed to the fact that it is challenging to be clear about the contribution of information services to outcomes, let alone impact. Information services can only play a supporting role in change, providing information and evidence to influence knowledge, decisions, and behaviors. ReliefWeb may be an information-rich environment, but the interpretation of so much information percolating through many organizations can be problematic and working out consensus interpretations challenging.

4.5.2 Awareness of ReliefWeb

All the respondents were aware of the role of ReliefWeb plays in the humanitarian sector. The Humanitarian managers were also conversant with the policy and process of sharing their public documents and job vacancies with ReliefWeb. This clearly demonstrated the role of information management is highly valued as a key component of the humanitarian workers.

4.5.2.1 Number of Visitors to the Website

Data from Google analytics shows that throughout the year 2017, more than 6,8 million users visited ReliefWeb. Of these, 25% were from Africa. In the ranking of the total number of users, Kenya was ranked as the second country worldwide after the United States of America. This could be an indication that there is a high level of interest in humanitarian information in Kenya.

4.5.3 Importance of Information Sources in Decision Making

Table 4.9 shows how users ranked their preferred source of information.

Table 4.9: Importance of Information Sources

Respondent's Organization	Preferred source of information on ReliefWeb					
	UN Agencies	NGO's	Donor	Other	Total	
					Row Total	Percentage
NGO Total	14	8	6	2	30	53.0
UN Total	8	6	3	0	17	30.0
Donor Total	4	2	3	1	10	18.0
Column Total	26	16	12	3	57	100.0

Humanitarian workers know their information needs better than outsiders. This claim is supported by Taylor (1962), who says that information need is understood as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. The data appears to support this and there appears to be only a slight preference to UN as a source. Since the users of the information are also the producers, there is no definite pattern that can be seen in this preference.

4.5.4 Products used in Disaster Response

When asked which products offered in the ReliefWeb portal were most useful when responding to the 2014-2017 drought in Kenya, reports ranked highly as shown in Table 4.10. Some of the respondents selected more than one product.

Table 4.10: Products used in Disaster Response

Product	Frequency	Percentage
Reports	29	30.0
Maps	18	19.0
Trainings	12	13.0
Jobs	23	24.0
Topics pages	7	7.0
Apps	7	7.0
Total	96	100.0

Situation Updates were considered as most useful during the disaster phase. Most humanitarian organizations produce these updated either weekly or monthly depending on how the situation is evolving. Humanitarian managers said that these provided vital information during the disaster. The Headlines App by ReliefWeb provided updates on the current situation. The Crisis App was also useful in the response to the disaster with the updated numbers of those affected. The Kenya Drought Appeal document, a joint document produced by different United Nations agencies was considered a key document in the response to the drought.

4.5.5 Reliability of ReliefWeb to Users

In the evaluation of ReliefWeb reliability, the researcher sought to measure its effectiveness. According to Middleton (2002), website evaluation though influenced by the purpose of the site uses the criteria itemized as follows; Functionality, Authority, Validity, Obtainability, Relevance, Substance and Readability. The results are highlighted in Table 4.11.

- **Functionality:** To measure functionality, the researcher used the question as to whether it was easy to navigate through the website. To which 95% indicated that they agreed, thereby confirming that the website met this qualification. Another measure of functionality is correct links. When the respondents were asked if clicking on links took them to what they expected, 98% were in agreement.
- **Validity:** To measure validity, Middleton (2002), states that a valid website should indicate the site which its content is refereed from. All the documents posted in this web portal were referred and the source clearly indicated. Another way to measure if a website is valid is to check if the site report usage figures with a counter or graphics. This is readily available on the portal. This leads the researcher to conclude that ReliefWeb is a valid website.

- **Authority:** One of the ways to measure authority is to check if there is an editorial process indicated for vetting the contents. The ReliefWeb portal is monitored by a team of editors who identify and select the content that is most relevant to global humanitarian workers³, and therefore meets this measure of success.

Table 4.11: Statements on Web Users and Facilities and Strength of Agreement or Disagreement on the Reliability of ReliefWeb to Users

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total	
						Percentage	Frequency
It is easy to navigate through this web site.	42%	53%	5%	0%	0%	100%	43
It is easy to find what I want on this website.	23%	40%	19%	12%	7%	100%	43
This web site loads too slowly.	0%	5%	21%	44%	30%	100%	43
The graphics on this web site are pleasing.	16%	74%	7%	2%	0%	100%	43
Clicking on links takes me to what I expect.	60%	38%	2%	0%	0%	100%	43
The Apps are easy to use.	35%	42%	7%	14%	2%	100%	43
The mobile site loads quickly.	23%	58%	9%	5%	5%	100%	43
The information available is up to date.	60%	26%	7%	5%	2%	100%	43
Questions raised on the feedback form are responded to quickly.	23%	47%	14%	12%	5%	100%	43
The website uptime is above 99%.	91%	7%	2%	0%	0%	100%	43
Information source is clearly specified.	93%	5%	2%	0%	0%	100%	43

³ <https://reliefweb.int/about>

- **Obtainability:** One way of measuring obtainability of a website is to check if the site is available only on a fee-paying basis. The rationale of this being that if there are charges levied to obtain information, this limits its obtainability. ReliefWeb is a free website and therefore ranks highly in obtainability. Another criterion used is the naming convention used by checking if the site has a URL and domain naming that may easily be recalled. The researcher found out that the domains reliefweb.int, reliefweb.com and reliefweb.org all were pointing to the ReliefWeb website, thereby helping users find the portal easily. How quickly does a site load also measure obtainability? 81 % of the respondents stated that the website was not slow to load, 9% were neutral, and only 5 % felt it loaded slowly, meaning it was obtainable. 98% of the respondents also stated that the uptime of the website was 99%, meaning it was obtainable almost all the time.
- **Relevance:** Currency is one of the ways to measure relevance. It checks if there is an indication of when the website was last updated and/or an indication of how frequently it is updated. All documents on the ReliefWeb were time stamped. 86% of the respondents also stated that the information on ReliefWeb was up to date. This, therefore, leads the researcher to score the site highly in this regard. Another measure is whether the site is directed at a particular user community, and if it is stated. ReliefWeb is clearly targeted to the humanitarian community and this is clearly stated in the website's 'About Us' page.
- **Readability:** To measure readability the researcher checked if the information was free of typographical and spelling errors, of which none were found, making the website readable.
- **Are ReliefWeb resources compliant with W3C Web Content Accessibility Guidelines?** For the purposes of evaluating ReliefWeb, <https://webaccessibility.com/>

was used by the researcher to compare ReliefWeb against functional accessibility best practice for the visually impaired. The website was found to be 82% compliant.

4.5.6 Effectiveness of ReliefWeb in Meeting User Needs

Several questions were asked to determine if ReliefWeb was meeting the information needs and expectations of the humanitarian fraternity. Some include reasons for visiting the ReliefWeb website if the information provided helped them in the response to the drought and if the information provided was easy to interpret.

4.5.6.1 Degree of Satisfaction

There was a need to analyze the respondent responses on satisfaction to the question “*To what extent was the information in ReliefWeb consistent with your expectations?*” to find the degree of satisfaction experienced, as shown in Table 4.12, most users expressed that the information was consistent with their expectations.

Table 4.12: Extent Information on ReliefWeb was Consistent with Expectations

Degree of Information consistency	Frequency	Percentage
Very Consistent	19	42.0
Consistent	23	51.0
Partly Consistent	3	7.0
Total	45	100.0

4.5.6.2 Kind of Information Needed

Of the eight managers who were interviewed, six said they were satisfied with the kind of information available at ReliefWeb, while only two were not satisfied. Most stated that they were looking for Situation Reports, country information, and job opportunities. Managers from the human resource department said that they were able to get a bigger pool of

candidates to recruit from, while those from NGOs also stated that the training they offered got through to the right candidates after being posted on ReliefWeb.

4.5.6.3 Information Delivery and Sharing

This section also presents findings of delivery from the perspective of humanitarian managers. It tested if the information on ReliefWeb improved knowledge and response to the disaster. The majority, seven out of eight, said that having the information on ReliefWeb was important as it provides current awareness service with regard to disasters and crisis. This was especially useful to them when in remote locations where they could not attend cluster meetings to get information updates regarding the disaster.

- **Information for the pre-disaster phase:** According to the managers, maps available on the portal provided general risk information. Organizations like FEWSNET provided documents with early warnings on the disaster. The presence of an “Alerts” was also considered to be a great tool to assist in early warning regarding the imminent disaster. ReliefWeb has a classification system which they use to grade disasters as following; Alert → Ongoing Disaster → Past disaster. Humanitarian workers stated that it was important to be able to draw information regarding the past handling of similar disasters and also to understand the severity of the disaster.
- **Information for the Disaster phase:** Situation Updates were considered as most useful during the disaster phase by the managers. Most humanitarian organizations produce these updated either weekly or monthly depending on how the situation is evolving. Press releases also provided vital information during the disaster. The Headlines App by ReliefWeb provided updates on the current situation. The Crisis App was also critical in this phase of the disaster with the updated numbers of those affected by the disaster. The Kenya Drought Appeal document, a joint document

produced by different United Nations agencies was considered a key document in the response to the drought.

- **Information for the Post-Disaster phase:** Documents on lessons learnt were considered vital for the post disaster phase. Availability of the content format “Evaluations and Lessons Learnt” was quoted as useful.

4.5.7 Ranking of Services offered by ReliefWeb

Humanitarian workers ranked how having their document on the ReliefWeb portal benefitted their organization. Table 4.13 displays how the services were ranked in order of importance. Finding good job candidates ranked very highly, while press coverage was ranked as the least important.

- **Donor appreciation and donor relations:** Only 16% of the respondent did not consider that having their information on ReliefWeb did not improve donor relations. This shows that they consider ReliefWeb to have added value in terms of helping them increase their funding.
- **More visibility of your organization:** All the humanitarian workers questioned felt that it was of importance to have their documents on ReliefWeb in order to increase visibility of the activities they engaged. With over 6.8 million views to the portal in 2017, this therefore supports this position by the respondents.
- **Fundraising:** A majority of the respondents, 97% considered that ReliefWeb improved their fundraising process. To this end, having their appeal for funds documents increased their chances of receiving the funding requested.

Table 4.13: Ranking of Services offered by ReliefWeb

Services to be ranked	Not important at all	Unimportant	Moderately important	Important	Very important	Total	
						Percentage	Frequency
Increased impact in the field	0%	3%	45%	28%	25%	100%	40
Increasing press coverage	28%	38%	30%	3%	3%	100%	40
Finding good job candidates	0%	0%	2%	10%	88%	100%	40
Better coordination with other organizations	3%	3%	18%	65%	13%	100%	40
Donor appreciation and donor relations	3%	13%	43%	25%	18%	100%	40
More visibility of your organization	0%	0%	38%	30%	33%	100%	40
Fundraising	0%	3%	55%	18%	25%	100%	40

4.6 Summary

Chapter 4 presented data obtained from the questionnaires and interviews. The data was categorized according to the objectives of the study as set by the researcher. The next chapter will interpret the data presented in this chapter.

CHAPTER FIVE

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings and gives conclusions and recommendations of the study. The implications of the research findings are explained. Additional research areas are also suggested.

5.2 Summary

A transaction with an information service should lead to new knowledge, awareness and possibly understanding, and possibly provide a solution to a problem identified, thus empowering all involved.

ReliefWeb should ideally meet the information needs of the website visitors and the humanitarian community in general. The set of questions by the researcher aimed to discover how aid workers felt about the website, and their perspective about the way the portal is offering or should offer its services. Data in response came from questionnaires to the humanitarian workers. The measure was more qualitative than quantitative.

5.2.1 Users of ReliefWeb

The researcher sought to identify the users of ReliefWeb in order to establish if ReliefWeb is reaching the right people or their target audience. These four general audiences capture the majority of ReliefWeb's users, humanitarian workers from the UN, NGOs, and donors. However, these categories do not capture all ReliefWeb users with independent consultants, academics and disaster-affected populations not fitting easily into any of the listed groups.

The homepage was still the preferred method of accessing the website, which could point to the majority age group of most users falling between 30-49 as shown in Table 4.3 queried.

This can be argued as an age group who traditionally has used the home page to access different resources on the internet.

5.2.2 Extent of Decision-Making based on ReliefWeb information

The ReliefWeb products are a source of information that humanitarians used to come to conclusive decisions after situational analysis and understanding. NGOs have also registered a positive effect of using ReliefWeb. Statements suggests that information is easier to get through ReliefWeb products unlike in the past where they had to go through a lot of data on multiple websites.

The ReliefWeb products came in handy with relevant information that was backed up by credible cross-sectorial data that eased decision making processes in humanitarian organizations. However, it is important to note that ReliefWeb products were not used as a primary basis of decision making. There are several appeals against which decision-making is evaluated before a final decision is made. The Situation Reports would be the next most influential. The Press Releases were the had little impact on the decisions made. However, they were used as a means to spread general awareness on disaster. Of note were the Humanitarian Bulletins. These documents capture all the aspects of a disaster in terms of number of people affected, response ongoing and it also aggregates the different sectors in the humanitarian industry. Topics Page was the least popular, however, the respondents mentioned that the protection and human rights Topics Page was important in times of disaster response. The headline section as wells the headline Apps was considered a news breaker.

Because a drought is a slow onset emergency, there is more time to analyze the situation. The key informants, therefore, noted that having information about previous droughts in Kenya

and having a page that consolidated all this information was very useful as a part of lessons learnt. The country-specific focus of ReliefWeb products was valued by the respondents.

Examples were given by users in the areas of advocacy, funding, setting priorities and programming which illustrated where ReliefWeb products had played a major role in the decision-making.

The following quotes show how ReliefWeb was used as a tool during the response of the Kenya drought 201-217.

Example 1: Proposal Writing - “I have found secondary data from this web and secondary data is useful when writing proposals and when writing assessment reports.”

“The information was useful when writing the proposal. The information also corresponds with other key actors in the refugee crisis such as UNHCR. The only slight discrepancy observed is on numbers conflicting.”

“This information was useful in terms of information, proposal writing, and preparation of situation reports to the donor community”

Example 2: Interpretation and understanding of the information provided on ReliefWeb - “Yes, we use ReliefWeb so much hence the staff members are aware how to access and interpret information”. In some instances, the information can be overtaken when the frequency of crisis is changing fast.

“ By having comparative updates on disasters, I was able to use ReliefWeb to compile reports.”

“I was able to get updates on the situation as it unfolded, get information on the ongoing interventions by different actors and the after-action reviews of how the response was undertaken”

“The NDMA bulletins provided insights on what activities are undertaken by other agencies in response to drought. It also gave information on phases of drought in various arid and semi-arid counties”

“ReliefWeb provided relevant and timely information, giving access to updates from Government and agencies working in Kenya and beyond.”

5.2.3 Reliability of ReliefWeb to Users

ReliefWeb transparency with regard to original data sources was valued by its users. Feedback on the different characteristics of the ReliefWeb products was generally positive with features identified per products that were particularly appreciated. International donors’ support of funding appeals makes humanitarian response efforts possible.

There was a need to analyze the respondent responses on satisfaction to the question “*To what extent was the information in ReliefWeb consistent with your expectations?*” to find the degree of satisfaction experienced, as shown in Table 4.12. Most users were satisfied, showing an aggregate 51% for those satisfied, 42% as very satisfied. Thus, ReliefWeb has played a valuable role in providing information on disasters and crisis. The majority feeling satisfied shows the portal has the potential in supplying useful information, whereas those who are only partly satisfied could be looking to meet other services not offered by ReliefWeb, or rather information offered in a different format.

95% of all respondents stated it was fairly easy to navigate. The exception was the search feature which was seen by some as complex and not retrieving the information required,

which can explain the 12% who strongly disagreed with the question asking whether “*it is easy to find what I want on this website.*”

While none of the survey respondents said that they had visual impairment one might argue (as one key informant did) that any UN-related website has a moral responsibility to aim for universal accessibility. There are also legal obligations to impaired users, such as the USA’s ‘Section 508’. The W3C Web Content Accessibility Guidelines provide a framework for evaluating the ease of use of web resources by people with disabilities. And there are many automated tools for validating websites. For the purposes of evaluating ReliefWeb, <https://webaccessibility.com/> was used to compare the website against functional accessibility best practice. The website was found to be 82% compliant.

5.2.3.1 Importance of Information Sources

Humanitarian workers know their information needs better than outsiders. This claim is supported by Taylor (1962), who says information need is understood as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. There was no pattern established in the way the users sought information posted with the information from the United Nations agencies having a slight majority as shown in Table 4.9. The researcher, therefore, concludes that this is because the consumers of the information are also the source.

Since the information in ReliefWeb is a collation from different sources, having it all under one location helped the respondents gain an understanding of the full picture of the disaster and so had no strong inclinations toward any of the sources.

5.2.4 Effectiveness of ReliefWeb in Meeting User Needs

For the donors, the information on ReliefWeb was used to complement their own information in informing priorities and developments. The donors had a need for access to up-to-date and

comprehensive information that paint an accurate picture of needs on the ground but with a focus on financial information. These users want to know where the needs are greatest, what factors are affecting those needs, and how their support can create the greatest impact. The funding appeals were important to the donors, but also other content and data provided the context.

The humanitarian professionals in the NGO's, provide grassroots operations in the disaster response. They also make policy and programming decisions, determine how to spend funds, and coordinate operations during disasters or crises. They needed direct access and reliable information on the ground during times of crisis. The information they found on ReliefWeb informed on the response and helped them to adjust their programmes accordingly. It enhanced their understanding of the contexts of the disaster and they were able to feed this information into funding proposals and advocacy. The Apps provided were a hit with the respondent the respondents felt that it was an easy way to access information.

Respondents also relied on ReliefWeb to locate training opportunities in the humanitarian sector, which they considered provided the added value in career advancement. They told of how they valued ReliefWeb for being useful in providing them with timely information and thus empowering them in responding to the disaster. The empowerment theory largely supports this view as highlighted in the literature review. Also, well appreciated was the ability to know what the players in the industry were doing thus creating a synergy and allowing for the community to understand the gaps in response. The systems theory supports this position. (View section 2.2.2 and 2.2.3)

By accessing ReliefWeb, the respondents acquired new knowledge, or change in awareness, understanding or competence. There is solid evidence from the survey that respondents have benefited in this way. Most were unequivocal in mentioning this type of effect. Most key

informants who were regular users volunteered that ReliefWeb had increased their knowledge and improved their understanding of aspects of disaster response – and by implication helped them to better perform their jobs.

The Jobs section of the ReliefWeb website proved to be most popular, to both job seekers and employers in the humanitarian sector. The respondents expressed that because ReliefWeb is a service provided by the United Nations, they could trust that the jobs listed were valid.

5.2.4.1 ReliefWeb Awareness

Most respondents had an understanding of ReliefWeb and its roles and objectives. Those who understood the roles and objectives continuously requested for the services especially the posting of jobs and trainings by humanitarian organizations. As shown in Figure 4.3 and 4.4, the respondents stated that the information on ReliefWeb improved their knowledge and response to the disaster.

5.2.4.2 Information Delivery and Sharing

To explain the information sharing process, the findings from the humanitarian managers revealed that most were aware of the process of having information from the organizations posted on ReliefWeb and had experienced no difficulty in communication with the organization, with the process having been passed on over the years to different managers.

5.3 Conclusions

The respondents presented their perspective on ReliefWeb achievements. These perspectives are presented in this section.

5.3.1 Users of ReliefWeb

Although the user base in the humanitarian sector is solid, the humanitarian workers who had worked between 0-5 years visited the website with less frequency than those with more than

six years of humanitarian work experience. This leads the researcher to conclude that as users gain more experience in the humanitarian sector, they become more aware of the different tools available and thereby increase usage. According to ReliefWeb, its main objective is to be the leading humanitarian information source on global crises and disasters to humanitarian responders, the researcher, therefore, concludes that the web portal was used by humanitarian workers in the course of their work, and indeed during the response to the 2014-2017 drought in Kenya.

User registration was however cited as tedious since it did not incorporate options to integrate with popular tools like Gmail or Facebook.

5.3.2 Extent of Decision-Making based on ReliefWeb Information

Information services can only play a supporting role in Disaster Management, by providing information and evidence to influence knowledge, decisions, and behaviors. ReliefWeb may be an information-rich environment, but the interpretation of so much information percolating through many organizations can be problematic and working out consensus interpretations challenging. Not information scarcity, but sense-making what is happening on the ground among the affected population.

By providing access to evidence and robust new ideas, well-packaged ReliefWeb information services and products did influence and catalyze improvements in policy and programming. But it is challenging to establish direct attribution for decision making directly to an information intervention's activities and outputs, particularly in a complex issue like a drought.

While without any doubt, ReliefWeb has played a role in the response process of the 2014-2017 drought in Kenya, it is not possible to put a measure in what ReliefWeb has influenced and, equally importantly, what it has not. Currently, ReliefWeb is not able to be able to

disentangle its contribution from the many other factors that operate within the domain. Establishing decision-making proved tricky, the evidence reported tended to be piecemeal and anecdotal and taking place within a context where direct attribution to, or credible contribution from ReliefWeb was not possible. Most key informants could not recall attenuated or pivotal effects of ReliefWeb. What several informants did volunteer was that ReliefWeb, in particular, had made a wider contribution to shaping and informing the disaster management domain. To paraphrase, there is sufficient anecdotal evidence for ReliefWeb to credibly claim to have played an important role in Disaster Management during the Kenya drought.

The humanitarian managers said that it is essential in disaster response for all involved into work as a team, and ReliefWeb was providing this service.

5.3.3 Was ReliefWeb Reliable to Users?

The researcher concludes that ReliefWeb was a reliable source of information for humanitarian workers in the process of responding to the 2014-2017 drought in Kenya. Feedback from respondents on the different characteristics of the ReliefWeb products was generally positive with features identified per product that were particularly appreciated. By utilizing the measures of effectiveness given by Middleton (2002), the researcher found that out of the criteria (Functionality, Authority, Validity, Obtainability, Relevance, Substance and Readability), ReliefWeb was ranked favorably by the respondents. Over 70% of the respondent agreed that ReliefWeb meets the criteria of a reliable and effective website. Because the website was found to be 82% compliant against the measure of functional accessibility best practice for the visually impaired, this also adds to its being reliable. 93% of the respondents, (Table 4.12) stated that was the information on ReliefWeb consistent with their expectations.

Having the service and information updated available 24/7 was also greatly commended as reliable especially in reporting updates of the disasters. Having the information in a central location over the years was also considered a great advantage with the respondents saying that they found it useful for lessons learned in humanitarian response activities.

All these factors, therefore, lead the researcher to conclude that ReliefWeb was considered reliable by its users.

5.3.4 Effectiveness of ReliefWeb in Meeting User Needs

Respondents considered information as a valuable commodity during emergencies or disasters. Although different groups of users had different information needs, they were able to get the information they were looking for at ReliefWeb.

Humanitarian workers are satisfied with the information available: There are more satisfied with the information from ReliefWeb than those dissatisfied. United Nations agencies are the main sources used to access the information.

In terms of providing an information repository platform, ReliefWeb can be considered relevant to its current users. Responding to the question “ReliefWeb has provided the humanitarian community with an information repository service. In your opinion, over the next 5 years, ReliefWeb should:” 80% of respondent chose ‘continue to provide an information service’, was by far the most popular response. This would suggest that ReliefWeb is relevant to its users in serving the information needs of the humanitarian community. However, this finding may be self-serving as it essentially asks current users if they would like ReliefWeb to continue what it always has done. As current users, they are likely to want ReliefWeb to continue to provide the services they use.

In this way, the researcher concludes that ReliefWeb was effective in meeting the different user needs.

5.4 Recommendations

Based on the information gained through this research, ReliefWeb is highly valued and appreciated by their users, however, a number of recommendations for future action are proposed in order to address current needs and improve usage. There is significant appreciative, anecdotal evidence that ReliefWeb has established itself as the ‘go-to’ information repository in the Disaster Management domain. However, there some recommendations on how ReliefWeb can continue to meet its user needs in even with evolving technological environment.

5.4.1 Users of ReliefWeb

There was not a lot of information on ReliefWeb geared towards the crisis-affected populations. Given that ReliefWeb has a huge client base, they can act as a “two-way” communication between aid agencies and crisis-affected populations regarding the latter’s needs and relevance of the aid being provided.

Relatively few users interact with ReliefWeb beyond accessing information and ReliefWeb should consider ways in which it can increase participation in community-style online activities. This might include greater integration with existing social networking tools, guidance for interaction; and simpler, more intuitive functionality for logging in and contributing.

ReliefWeb should incorporate options to integrate its user registration with popular tools like Gmail or Facebook.

5.4.2 Extent of Decision-Making based on ReliefWeb Information

ReliefWeb should identify their users changing information interests, especially the need for changing information type. There has been a recent growth in the need for data as opposed to prose. ReliefWeb is viewed primarily as a comprehensive information repository. Whilst it is likely to maintain this reputation, inaction or continuation with a primary focus on information aggregation may cause it to become increasingly irrelevant in terms of shaping the information management domain even as technology advances.

5.4.3 Reliability of ReliefWeb to Users

ReliefWeb should make their website multi-lingual whereby the content is written in more than one language. Having other language options will increase the diversity of the audience. As a trusted source, it can be used in blockchain technologies to humanitarian aid efforts.

5.4.4 Effectiveness of ReliefWeb in Meeting User Needs

A few of the respondents were concerned about the viability of the project in the long run, given the changing technologies and how the information would be preserved for the future. ReliefWeb should be at the forefront of technological advancements to ensure they remain relevant in meeting user needs.

ReliefWeb should engage its users more in an awareness campaign, so that as to increase the consumption of all its products.

Since there is a weakness on the search feature, this research leads to a conclusion that the filtered search does not necessarily add value and ReliefWeb should consider trialing a built-in Google custom search. With some of the traffic coming from Google anyway and informants expressing a preference for the leading search provider, then ReliefWeb search cannot be considered 'better than Google'.

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APPENDICES

APPENDIX 1: INFORMED CONSENT FORM

Dear Respondent,

My name is Mary Wanjira Kamau and I am a student at the University of Nairobi where I am undertaking a Masters Degree in Sociology (Disaster Management). As part of the fulfillment for the award of a Masters of Arts Degree in Sociology, I am required to submit a research paper in my area of interest. I am therefore carrying out a research on Impact of Information Management Systems in disaster management in the Kenya. Specifically, I am interested in how humanitarian workers utilized the ReliefWeb information system in managing the 2014-2017 drought in Kenya.

You have been selected as a participant in this research and kindly requested to give your honest response to the questions. You are free to withdraw from the research at any time if you so wish. The information given will be treated with confidentiality and will be used purely for academic purposes and not for publicity. Kindly append your signature here below to indicate your consent as a participant in this study.

Thank you.

I have read the above and confirm my willingness to participate in the study. I am also aware that I can withdrawal from the study if I so wish.

Signature : Date :

APPENDIX II : QUESTIONNAIRE FOR HUMANITARIAN WORKERS

DEMOGRAPHIC DATA

1) Identification Code: _____

2) Age: _____

☐ Under 20

☐ 20-29

☐ 30-39

☐ 40-49

☐ 50 and above

3) Gender:

☐ Male

☐ Female

4) Level of education:

☐ University – Post graduate level

☐ University – Under graduate

☐ Diploma

☐ Secondary

SECTION A: TYPES OF RELIEFWEB USERS IN DISASTES AND CRISIS

5) Duration of work in humanitarian sector:

☐ 0 – 5 years

☐ 6 – 9 years

☐ 10 and above

6) What type of organization do you work for?

- ☐ Non-Governmental Organization (International)
 - ☐ Non-Governmental Organization (National/Local)
 - ☐ Government
 - ☐ United Nations
 - ☐ Donor
 - ☐ Other (please specify)
-

7) What is your primary role in your organization?

- ☐ Communications
 - ☐ Senior manager / policy maker
 - ☐ Desk officer / analyst
 - ☐ Human resources
 - ☐ Researcher
 - ☐ Other (please specify)
-

**SECTION B: DECISIONS BASED ON INFORMATION PROVIDED VIA
RELIEFWEB (reliefweb.int)**

8) Are you familiar with ReliefWeb in this organization?

- ☐ Yes
- ☐ No

9) How do you access ReliefWeb information?

- ☐ Via the Apps
 - ☐ Via the home webpage
 - ☐ Through google
 - ☐ Twitter
 - ☐ Facebook
 - ☐ Other (Specify)
-

10) Which ReliefWeb Apps do you use?

- ☐ Headlines App
- ☐ Crisis App
- ☐ Jobs App
- ☐ Videos App

11) What device do you use to access ReliefWeb?

- ☐ Mobile device
- ☐ Desktop/Laptop
- ☐ Tablet

12) How often do you visit the ReliefWeb website?

- ☐ Daily
 - ☐ Once a week
 - ☐ Once per month
 - ☐ Other (Specify):
-

13) What information were you looking for in ReliefWeb?

- ☐ Information of people in need
- ☐ Humanitarian financing Information
- ☐ Information on humanitarian needs
- ☐ Information on Gaps in meeting needs
- ☐ Contact information
- ☐ Other _____

14) What type of organization do you mostly use when you are looking for information in ReliefWeb?

- ☐ United Nations agencies
- ☐ Non-Governmental organizations
- ☐ Donor or government agencies

Other _____

15) To what extent was the information in ReliefWeb consistent with your expectations?

- ☐ Not consistent
- ☐ Partly consistent
- ☐ Consistent
- ☐ Very consistent

16) Do you think the information available on ReliefWeb has improved your knowledge of the 2014-2017 drought in Kenya?

- ☐ Yes
- ☐ No

If yes, in which way?

17) Do you think the availability of ReliefWeb and the information accessed has led to improvement in the response of the drought?

☐ Yes

☐ No

If yes, please explain further

18) Which ReliefWeb products did you find to be the most useful when responding to the 2014-2017 drought in Kenya, and why?

☐ Reports

☐ Maps

☐ Trainings

☐ Jobs

☐ Topics

☐ Apps

19) For each of the services listed below, rate the benefit to your organization of sharing materials on ReliefWeb. Please rank the services in order of importance

(1 -Not important at all. 2 – Unimportant. 3 -Moderately important. 4 –Important. 5 -Very important)

Services to be ranked	1	2	3	4	5
Increased impact in the field					
Increasing press coverage					
Finding good job candidates					
Better coordination with other organizations					
Donor appreciation and donor relations					
More visibility of your organization					
Fundraising					

20) Can you give a specific example of how sharing your documents/resources on ReliefWeb have benefited your organization?

SECTION C: RELIABILITY OF RELIEFWEB

Consider each statement in questions 21-31 and indicate how strongly you agree or disagree with each one.

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
21) It is easy to navigate through this web site.					
22) It is easy to find what I want on this website.					
23) This web site loads too slowly.					
24) The graphics on this web site are pleasing.					
25) Clicking on links takes me to what I expect.					
26) The Apps are easy to use.					
27) The mobile site loads quickly.					
28) The information available is up to date.					
29) Questions raised on the feedback form are responded to quickly.					
30) The website uptime is above 99%.					
31) Information source is clearly specified.					

SUSTAINABILITY

32) What improvement if any, would you suggest for ReliefWeb?

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE FOR HUMANITARIAN MANAGERS

Researcher: Mary Wanjira Kamau

Interview Date:

The purpose of this interview is to find out the role information management plays in the process of disaster management. I therefore, found it necessary to interview individuals with a wealth of experience in the humanitarian sector. You are among the list of potential interviewees. I am kindly requesting you to respond to the following questions.

- 1) What is your primary role in your organization?

AWARENESS OF RELIEFWEB – UN/NGOs

- 2) What information do you look for in ReliefWeb (**reliefweb.int**)?
- 3) How has the information available in ReliefWeb has improved your knowledge and response to the 2014-2017 drought in Kenya?
- 4) Are there any gaps in provision of information that is on ReliefWeb?

- 5) Do you find people in your department being able to interpret or understand information provided on ReliefWeb?
- 6) What is your policy on sharing information from your agency to ReliefWeb?
- 7) What challenges have you encountered while sharing information to and from ReliefWeb?
- 8) If possible, can you provide a specific example where ReliefWeb has influenced your work?
- 9) What other IM web portals do you use to access information on Disasters/crises?
- 10) Up to now, ReliefWeb has provided the humanitarian community with an information repository service. In your opinion, over the next 5 years, ReliefWeb should:
(please choose the 2 MOST important options)
- ☐ Continue providing an information service, as it has done to date
 - ☐ Devote more visible space to online discussion about Disaster Management topics
 - ☐ Transfer more responsibility for content to users themselves, like Wikipedia for example

- ☐ Provide more data centered information
- ☐ Integrate with other portals
- ☐ Close the site down, and allocate the resources elsewhere

11) What improvement if any, would you suggest for ReliefWeb?

AWARENESS OF RELIEFWEB – Donors and Government of Kenya

1) What is your primary role in your organization?

2) What information do you look for in ReliefWeb?

3) How has the information available in ReliefWeb influenced your contributions in the response to the 2014-2017 drought in Kenya? If possible, can you provide a specific example where ReliefWeb has influenced your work?

4) Are there any gaps in provision of information that is on ReliefWeb?

- 5) What is your policy on sharing information from your agency to ReliefWeb?
- 6) What challenges have you encountered while sharing information to and from ReliefWeb?
- 7) What other IM web portals do you use to access information on Disasters/crises?
- 8) What improvement if any, would you suggest for ReliefWeb?