

# **HUMANITARIAN SUPPLY CHAIN MANAGEMENT IN KENYA**

**By**

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## DECLARATION

This research project is my original work and has not been submitted for a degree award in any other university. No part of this work should be reproduced without my consent or that of the University of Nairobi.

Signed.....

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D61/61689/2010

### **Declaration by the Supervisor**

This research project has been submitted for examination with my approval as University of Nairobi supervisor.

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## **DEDICATION**

This project is dedicated to God, my family and all those who supported me in the completion of this project. Thank you.

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I thank my supervisor, Prof. Gituro Wainaina, for his dedication, time and effort in guiding me until the end. Your comments, advice, criticism and suggestions are highly appreciated.

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## **ABSTRACT**

Every year there are about 500 disasters killing about 75,000 people and affecting some 200 million people. Humanitarian organizations play a big role in meeting the basic needs of millions of people in need of humanitarian aid. In recent years, humanitarians have come under immense pressure from the donors, pledging millions in aid and goods, to prove that they are meeting their objectives in the most efficient and effective way. Eighty percent of humanitarian organization's operations is spent on logistics and Supply Chain Management (SCM). Supply chain challenges faced therefore worsen humanitarian operations creating a lot of uncertainty among humanitarian organizations.

This study was carried out to identify the challenges facing humanitarian supply chain during disaster situation, the effect of the challenges and practices that can be adopted to overcome the challenges. The study had three objectives; to identify supply chain practices adopted by humanitarian organizations, identify supply chain challenges facing humanitarian organizations in emergencies and identify SCM practices that can be adopted to overcome the challenges.

The study adopted a case study approach with a focus on three organizations namely Kenya Red Cross Society (KRCS), United Nations Children Fund (UNICEF) and United Nations High Commissioner for Refugees (UNHCR). Data was successfully collected from supply chain managers of the three organizations, analyzed using Statistic Package for Social Science (SPSS) and presented using means scores and standard deviation in form of tables. From the findings, challenges facing humanitarian organizations were grouped into management related challenges, financial related challenges and operating environment related challenges. The effects of supply chain challenges on performance were identified as delay in delivery, uncertainty in demand, poor quality and quantity of goods and services delivered. Strategies recommended to be adopted to overcome these challenges were improved tendering process, adoption of technology, training of staff and demand analysis.



## **ABBREVIATIONS**

KRCS	Kenya Red Cross Society
NGO	Non Governmental Organization
UNHCR	United Nation High Commissioner for Refugees
UNICEF	United Nations Children Fund
SCM	Supply Chain Management
HSCM	Humanitarian Supply Chain Management

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Disaster is the disruption of a system that affects its operations as a whole and threatens its priority and goals. A disaster can be natural or man-made with a natural disaster being caused by an act of God, such as earthquake, famine and drought while man-made disaster are caused by human behavior, for example terrorism, coups and rebellions. Every year, there are about 500 disasters killing about 75,000 people and affecting some 200 million people (Wassenhove, 2006). For example, in Sudan alone, there are about 2.5 million people in Darfur displaced by the war who are in need of assistance not to mention the million of returnees in South Sudan. In Syria, about 4 million people have been displaced by the war while 800,000 people have lost their lives. Humanitarian organizations therefore play a big role in meeting the basic needs of millions of people in need of humanitarian aid.

A humanitarian organization is a not-for-profit institution/body dedicated to providing aid or assistance to the vulnerable members of society. These institutions operate in areas of emergency and areas where people are afflicted by conflict, disease and poverty. Humanitarian organizations depend fully on donor funds from development partners, governments and volunteers. Humanitarian organizations are also referred to as Non Governmental Organizations (NGOs) or relief organizations. In this study, these terms will be used interchangeably to mean the same thing.

The main objective of humanitarian organizations include value for money, achieving efficiency and effectiveness, ensuring fair competition among suppliers, ensuring accountability, transparency and ethics. This is different from private sector companies who are profit oriented.

In recent years, humanitarians have come under immense pressure from the donors, pledging millions in aid and goods, to prove that they are meeting their objectives in the

most efficient and effective way. Since donors are becoming more involved when it comes to expenses, humanitarian organizations are under greater scrutiny to monitor the impact of aid, not just the input and output but the whole operation (Wassenhove, 2006). As a result, humanitarian organizations are forced to be more result oriented, accountable and transparent in their operations.

In disaster relief, 80 percent of the operations are spent on logistics. Therefore, efficiency and effectiveness in logistics and in particular SCM is of dire importance in the operation of humanitarian organizations. Therefore, just as the science of logistics and SCM has become important for private sector logisticians, so too is it becoming more important for humanitarians (Wassenhove, 2006).

### **1.1.1 Supply Chain Management**

Supply chain management is a system where organizations, people, technology, activities, information and resources are involved in moving a product or service from suppliers to customer. Supply chain activities transform natural resources, raw materials and components to finished products. Quinn (1997) defines the supply chain as “all of those activities associated with moving goods, from the raw materials stage through to the end user. This includes sourcing and procurement, production scheduling, order processing, inventory management, transportation, warehousing and customer service.

Supply chain management is the management of the network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers (Harland 1996). Supply chain management spans all movement and storage of raw materials, work in progress inventory and finished goods from point of origin to point of consumption. It is a process of managing the flow of raw material, transforming raw material into finished products and distribution of the products to the consumer. In short, supply chain links the source of supply (supplier) to the owner of demand (consumer). Through the supply chain process, the end user (consumer) hopes to get the right supplier, in the right quantity and quality, at the right time and in the right location. The SCM involves five basic processes namely planning, sourcing, making, delivery and return.

Planning is the strategic portion of SCM and companies need a strategy for managing all the resources that go toward meeting customer demand for their product or service. A large part of SCM planning is developing a set of metrics to monitor the supply chain so that it is efficient, costs less and delivers high quality and value to customers or end users. Sourcing involves choosing suppliers to deliver goods and services needed to create a product. Therefore, supply chain managers develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships. The SCM managers can put together processes for managing their goods and services inventory, including receiving and verifying shipments, transferring them to the manufacturing facilities and authorizing supplier payments.

Making is the manufacturing step and involves supply chain managers scheduling the activities necessary for production, testing, packaging and preparation for delivery. This is the most metric-intensive portion of the supply chain—one where companies are able to measure quality levels, production output and worker productivity. Delivery is the part that many SCM insiders refer to as logistics. It is where companies coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments. The last process, return, can be a problematic part of the supply chain for many companies. Supply chain planners have to create a responsive and flexible network for receiving defective and excess products back from their customers and supporting customers who have problems with delivered products.

### **1.1.2 Procurement**

Procurement is part of the supply chain process and is the act of buying goods and services. The process includes preparation and processing of a demand as well as the end receipt and approval of payment. It is the acquisition of goods, services or works from an external source. Procurement involves buying goods or services at the best possible cost to meet the needs of the purchaser in terms of quality and quantity, time and location. Quinn (1997) defines procurement as ‘all of those activities associated with acquisition of goods, from

raw materials stage through to the end products. This includes sourcing and purchasing, order processing, inventory management, transportation, warehousing and customer service'. According to Thai 2001, public procurement refers to the acquisition of goods and services by government or public sector organizations and is one of the key economic activities of government. Corporations and public bodies often define procurement as the processes intended to promote fair and open competition for their business while minimizing exposure to fraud and collusion.

Procurement in humanitarian organizations usually represents a very large portion of the total spending by organizations. The Non Governmental Organizations (NGOs) operations face challenges in procurement different from those experienced by the commercial sector due to the nature of the environment in which they operate. Humanitarian organizations operating in emergency environment are normally under pressure to deploy immediate resources with limited knowledge of the resources needed in the field, and quantities required. They mostly operate in unpredictable environment where delivery time is of great importance.

Procurement constraints are also imposed by the nature and context in which humanitarian aid actions are implemented. Questions such as the timely delivery of aid, the specificity of supplies needed and the need for quality are particularly challenging in a context of a disaster.

Previously, the relief operations were allowed to break all the procurement rules in their bid to reduce or eliminate the suffering faced by the vulnerable people. This was more so in emergencies where the donors were most interested in the supplies reaching the beneficiaries in the fastest way possible and not in the procurement and supply chain process followed by NGOs this is, however no longer the case.

Following the global economic crises that affected and is still affecting most developing countries, the mentality of the donor has shifted and the process followed to get the supplies to the beneficiary now equally concerns the donor. This is because of the turbulent economic environment faced by most of the world's economies and the demand by their

electorates to know how public funds are being spent. Most donor countries, for example the United States and United Kingdom have to demonstrate to their electorate that there is value for money in the public fund spent on donor aid. This is mostly done through presentations and debates in parliament. The need for accountability has led to donors demanding humanitarian organizations procure goods and supplies competitively and that the goods and services provided to beneficiaries meet the high quality requirements. The donors now require NGOs to constantly search for new innovative ways of reducing costs of operation and improving performance.

### **1.1.3 Logistics**

Logistics mean different things to different people; to the military, it is the science of planning and carrying out the movement and maintenance of forces of military operations that deal with the design and development, acquisition, storage, movement, distribution, maintenance, evacuation and disposition of material (Department of Defense (DOD), 2002). To businesses, it is defined as a planning framework for the management of material, service, information and capital flows and includes the increasingly complex information, material, communication and control systems required in today's business environment.

To many humanitarians, the definition of logistics is open to loose interpretation. Senior logistics representatives at the Fritz Institute defined logistics as the process of planning, implementing and controlling the efficient, cost-effective flow of and storage of goods and materials as well as related information, from point of origin to point of consumption for the purpose of meeting the end beneficiary's requirements' (Thomas & Mizushima, 2005). In short, for humanitarian organizations, logistics is the process of mobilizing resources, people, skills and knowledge to be able to help the most vulnerable members of the society.

### **1.1.4 Humanitarian Supply Chain Management**

Humanitarian supply chain is the process used by not-for-profit or donor funded organizations to plan, implement, control the efficiency, cost effective flow and storage of

goods and materials as well as related material, from the point of origin to the point of consumption for the purpose of alleviating the suffering of the most vulnerable and most at risk people. The function encompasses a range of activities, including preparedness, planning, procurement, transporting, warehousing, tracking and tracing and custom clearance (Oloruntoba & Gray, 2006).

Humanitarian supply chain involves components such as procurement, transportation, warehousing, inventory management, tracing and tracking, bidding and reserve bidding, reporting and accountability to address emergency needs (Mbohwa, 2006). It involves flow of relief from the donor to the beneficiaries. There is need to coordinate and manage disaster supply chain to ensure that humanitarian organizations gain from the benefits of having a supply chain system in place. The humanitarian supply chain would ensure that even in times of emergency, the humanitarian organizations receive value for money in procurement of goods and services.

Humanitarian organizations that have an effective SCM system in place benefit from transparency – all phases in the procurement process are fair and accurately documented. This contributes to the establishment of sound and reliable business relations with suppliers; accountability – accountability to donors who may require certain rules to be followed when using the money they have provided. This ensures that expenses incurred are accepted by the donor and no funds are disallowed; efficiency and cost effectiveness – meeting the six rights of supply; right price, right time, right quantity, right quality, delivery to the right places and from the right source/supplier. This has an impact on the operations of the organization and on the beneficiary.

When disaster strikes, relief organizations respond by delivering aid to those in need, quickly and effectively. Their supply chains must be both fast and agile, responding to sudden disasters. A disaster response operation involves trade-off of speed, cost and accuracy with regard to the type of goods that are delivered and the quantities (Mbohwa, 2006). Operations can be in many challenging places, which the corporate sector and businesses shun. Creating and implementing complicated logistic solutions and dealing

with the final leg between the final distribution centre and the beneficiary or client is a challenge to many relief organizations (Mbohwa, 2006). This paper aims to identify challenges faced and possible solutions to these challenges.

Humanitarian operation is divided into two; development and emergency. The NGOs operate in either the development sector or emergency sector. Some, however operate in both sectors by having a department that deals in development and one that deals in emergency. The development sector includes activities that take place over a long period of time (longer than one year) while emergency sector deal with short term activities mainly during disasters.

In Kenya, there are over 2,000 NGOs registered with NGO council. These NGOs are active in various sectors including agriculture, water, education, environment, health, human rights gender and development, children's rights, poverty alleviation, peace, population, training, counseling, small-scale enterprises, disability and many others. Of these, about 40 of them operate in disaster management.

## **1.2 Statement of the Problem**

The humanitarian environment is becoming increasingly complex, given the number and diversity of the different stakeholders involved and the environment in which they operate. There is the public sector with the government agencies, emergency relief mechanism and local authorities. There is the private sector with the corporations, service providers, goods suppliers and individuals. In between, there is the international community and the large and small aid agencies. Lastly, there is the society at large, which, regardless of their condition after the disaster, are exposed to unexpected changes (Tomasini & Wassenhove, 2004). All these stakeholders have different expectations that need to be coordinated for an effective outcome. Failure to do so would be at the expense of optimal performance of the humanitarian organization and ultimately the well-being of those in critical need of assistance. To coordinate all these stakeholders' needs, some level of accountability need to be present at every stage of the organization's operations including supply chain.



In ensuring accountability in the supply chain system, there is need for the organizations to comply with agreed upon standards of performance (from donors), the organization's own policies and procedures, procurement best practices and laws and regulations of the country of operation. In implementing SCM process in a relief situation, humanitarian organizations are guided by donor requirement, the organization's procurement policies and national laws. However, these guidelines are rarely followed during disasters. This is because managers coordinating logistics, during relief efforts, are often overwhelmed to deliver goods and services needed at the shortest time possible. Failure to do so can result in the loss of life and resources. By doing this, organization in most cases, do not achieve their objectives of ensuring value for money, achieving efficiency and effectiveness, ensuring fair competition among suppliers, and ensuring accountability, transparency and ethics. This creates problems in the organization especially with donors who at time may disallow some expenses incurred or withdraw funding completely. Until recently, humanitarian SCM has not been given the proper attention needed and logistic skills remain underdeveloped (Wanssenhove, 2006). This is however changing as logistics starts to be recognized as an integral part of any relief operation.

Little has been done to address the challenges facing logisticians during relief efforts. In addition, the donor organizations do not understand the challenges faced and often penalize the relief organizations for not adhering to set guidelines. Nyamu (2012) carried out a research to ascertain the impact of SCM challenges facing humanitarian organizations in Kenya. The study identified the challenges but did not seek to establish solutions. Mohamed (2012) conducted a study to establish the SCM practices being implemented by humanitarian organizations in Kenya and their impact on performance. The study did not evaluate the effect of the challenges or identify possible solutions to the challenges faced.

Kovacs & Spens (2009) identified the challenges of humanitarian logisticians with respect to different types of disasters, phases of disaster relief and the type of humanitarian organization. The study was, however based on a country as a case study. Country environment and dynamics differ from country to country. According to Mbohwa (2006), to ensure the procurement process in NGOs is economical and efficient, there is need for

stakeholders, including donor agencies, government procurement entities, suppliers and the beneficiaries, to understand the humanitarian supply chain process. This includes understanding the SCM challenges and the impact of the challenges.

This research study seeks to shed light on the challenges facing humanitarian organizations during disasters/emergencies. Specifically, the study identified challenges faced in emergency relief SCM. The study also provided possible solutions of how some of these challenges can be reduced or eliminated. To achieve the intended objectives, the study sought to answer the following questions; what are the challenges facing emergency humanitarian organizations? how can these challenges be overcome?

### **1.3 Objectives of the Study**

This study sought to look at the challenges facing relief humanitarian SCM and the specific objectives were to:

- i. Identify supply chain practices adopted by KRCS, UNICEF and UNHCR
- ii. Identify supply chain challenges facing humanitarian organizations in emergency situations
- iii. Identify SCM practices that can be adopted to overcome the challenges.

### **1.4 Value of the Study**

Humanitarian organizations are 15 years behind their private sector counterparts who realized way back the importance of using efficient supply chain, particularly given the increasing opportunity to go global. It is only recently that humanitarian organizations such as International Federation of the Red Cross and Red Crescent Society (IFRC) and the World Food Programme (WFP) have identified logistic and SCM as a key to relief operations (Wassenhove, 2006).

Supply chain challenges worsen humanitarian situations and Nyamwange & Nyaguthie (2004) in their research on humanitarian logistic challenges, concluded that logistics for humanitarian aid are faced by many challenges and stressed the need for further knowledge and standards to help in effective and efficient humanitarian supply chain. This study

sought to build on research of humanitarian supply chain by identifying the challenges facing disaster SCM in humanitarian organizations, the impact of the challenges and possible solutions.

The study paper will benefit humanitarian organizations who will know beforehand possible challenges they might face during relief operations and put mitigating factors to reduce the impact of the challenges. Donors will understand supply chain management challenges facing humanitarian relief organizations and together with the humanitarian organizations work at adopting measures to mitigate the challenges. Governments, like donors, will work hand in hand with relief humanitarian organizations during disasters. The study will enable them to gain a better understanding of the relief operations and the challenges faced.

Future researchers and scholars will advance the body of knowledge on humanitarian SCM so that they can build upon the concept and work done. Other stakeholders will gain a better understanding of the environment within which relief humanitarian organizations operate.

## **1.5 Overview of the Study**

Chapter one provides a background to the study, the research problem, research objectives and value of the study. Chapter two is the review of recent relevant studies (local and international), which have been done. It identifies the objective of these studies and the results and gaps that have been identified. These studies will inform the research study.

Chapter three presents the research methodology. It covers the research design, population, sample, data collection and data analysis. Further, this chapter will give insights on how research data will be collected and analyzed and the appropriateness of the research methods in addressing the objectives. Chapter four will present the results of the study. The chapter will also deal with findings and conclusion as per each objective. The last chapter will contain the summary and conclusion of the study as well as recommendations and limitations of the research study, the extent to which the research objectives had been

achieved, the lessons learnt from the results, how that knowledge could be used and the shortcomings that could arise from the research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter identifies research work done on the challenges faced in disaster humanitarian SCM, the impact of the challenges and the possible solutions to resolve the challenges. The chapter focus on contextual and theoretic work done by other scholars. The purpose of this chapter is to document critical knowledge around the challenges facing humanitarian SCM.

#### **2.2 Supply Chain Management**

Supply chain management is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers (Harland, 1996). Supply chain management spans all movement and storage of raw materials, work-in-process inventory and finished goods from point of origin to point of consumption (supply chain). It is a process of managing the inflow of raw materials transforming the raw materials into finished products and distribution of the products to the customer.

A supply chains is a network consisting of suppliers, manufacturers, distributors, retailers and customers (Wassenhove, 2006). The network supports three types of ‘flows’ that require careful design and close coordination, which are material flows which represents physical product flows from suppliers to customers as well as reverse flows for product returns, servicing and recycling, information flows which represents order transmission and order tracking and which coordinate the physical flows, and financial flows which represents credit terms, payment schedules and consignment arrangements (Kleindorfer & Van Wassenhove, 2004).

Supply chain management recognizes that the competitive strength of a firm is not only determined by its products, but also by the operations and activities that place the products into customers’ hands and provide supporting services. Efficient and effective SCM enhances firm performance and adds value by increasing asset utilization to gain competitive market advantage. The responsiveness and efficiency of a company’s supply

chain arising from its design and management is integral to the firm's ability to successfully compete in the global marketplace.

### **2.3 Humanitarian Supply Chain Management**

Reaching displaced people in a humanitarian emergency is heavily dependent on the effectiveness of a supply chain. An effective disaster response supply chain is modeled into three stages preparedness, response and recovery (Carter, 1999). The Fritz Institute defines humanitarian logistics as the process of planning, implementing, and controlling the efficient, cost-effective flow and storage of goods, and materials, as well as related information, from point of origin to the point of consumption for alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing and custom clearance (Thomas & Kopczak, 2005).

Humanitarian SCM has attracted research attention in the recent years. This is because, despite improvements achieved in SCM across the commercial sector, humanitarian organizations are still constrained by the expectations of transparency and traceability of public funds. This affects how they conduct their procurement process. Supply experts have not yet fully grasped the maximum performance potential in this era of purchasing management (Larroya, 2011). Commercial supply chain links the sources of supply (suppliers) to the owners of demand (end customers). The ultimate goal of any supply chain is to deliver the right supplies in the right quantities to the right locations at the right time. Supply chains comprise all activities and processes associated with the flow and transformation of goods from the raw material stage through the end user (Beamon & Balcik, 2008). Similar to commercial supply chain, in humanitarian supply chain, supplies flow through the relief chain from the donation to the consumers/beneficiaries.

Government and NGOs are the primary parties' involved in humanitarian supply chain. Governments hold the main power with the control they have over political and economical conditions and directly affect to supply chain processes with their decisions. Donors, public and private organisations are the other significant players in the humanitarian supply

chains. Donors have become particularly influential in prompting humanitarian organisation to think in terms of greater donor accountability and transparency of the whole supply chain (Wassenhove, 2006). Humanitarian supply chains tend to be unstable, prone to political and military influence and inefficient due to lack of joint planning and inter-organizational collaboration (McLachlin et al., 2009). Humanitarian organizations deal with inadequate logistics infrastructure, along with shifting origins of and/or destinations for relief supplies without warning. Further, donors often request their funds to be spent on direct materials and food and even at a particular disaster location, rather than on crucial but indirect services such as information systems, staff training and/or disaster preparedness (Oloruntoba & Gray, 2006). Therefore, humanitarian SCM does not only deal with delivering goods, materials or information to the point of consumption for the purpose of alleviating the suffering of vulnerable people, but also needs to manage value to donors and other stakeholders.

Proper logistic management ensures performance (effectiveness and speed) of current and future operations and programmes; serves as a bridge between disaster preparedness and response, between procurement and distribution and between headquarters and the field. (Thomas & Mizushima, 2005) provides a rich source of data, since it is this department that handles the tracking of goods, which could be used to analyze post-event effectiveness (Thomas & Mizushima, 2005) and is the most expensive part of any relief operation and the part that can mean the difference between a successful or failed operation.

Challenges of humanitarian logisticians depend not only on the disaster at hand, but also on the local presence of their organization. The challenges depend on the different types of disasters, the phases of disaster relief and the type of humanitarian organization. Challenges in humanitarian supply chain include high uncertainty, challenges in collaboration among the multiple players and decision-makers in a humanitarian supply chain, the impact of the political, cultural and socioeconomic conditions of the region, strong dependency on last minute operations on the location and disaster severity and long-term impact of the many activities carried out during humanitarian operations. Other challenges include required speed of delivery (high uncertainty in timing), movement of

people from conflict zones (high uncertainty in location), influx of humanitarian staff (high uncertainty in demand) and funding biased towards short-term responses, lack of investment in technology and communication and success of humanitarian operation is hard to measure.

#### **2.4 Review of Previous Studies**

Disaster relief supply chain operates under conditions that would aggravate commercial supply chain players. The operating environment is uncertain and dynamic requiring deployment of unique management principles. Kovacs & Spens (2009) identified the challenges of humanitarian logisticians with respect to different types of disasters, phases of disaster relief and the type of humanitarian organization. In their conclusion, challenges of humanitarian logisticians depended not only on the disaster at hand, but also on the local presence of the organization. The most emphasized challenge in the study was the coordination of logistical activities. In the solutions for overcoming the challenges, Kovacs & Spens (2009), stated that the challenges could be better managed if they were attributed to the different stakeholder environments. Further, the study showed how a stakeholder categorization of the challenges would help to find potential collaboration partners as well as to mitigate the challenges; the study was based on Ghana. Structured and unstructured data was collected in a workshop with humanitarian logisticians and complemented with presentations of humanitarian logisticians, as they perceived their challenges. Disaster statistics and county profiles were used as secondary data. The study was, however not objective as it focused on a specific country. Country environments and/or dynamics differ from country to country and might affect the humanitarian supply chain differently.

Rodman (2004) explored the use of SCM techniques to overcome barriers encountered by logistics management during humanitarian relief operations. Using grounded theory methodology, he analyzed barriers based on academic, organizational and contemporary literature. Rodman also identified possible solutions to the barriers identified from available SCM literature. His work married supply chain principles from different disciplines including private, non-profit and military sectors with an aim of benefiting humanitarian operations. The challenges identified by Rodman as facing humanitarian



operations included uncertainty, degraded infrastructure, communications, human resources and earmarking of funds. The results of the study put forth a framework of SCM solutions for overcoming logistics difficulties during relief operations and explains why managers should consider their use.

Carroll & Neu (2009) examined the humanitarian logistics and supply chain operations literature, proposed an alternative theoretical grounding arising from that examination and stimulated further debate and analysis around themes introduced in the strategic evaluation of military, non-military and composite emergency relief logistics, the comparison of humanitarian and commercial supply chains and the coordination of humanitarian operations. As mentioned, the research was theoretic and did not include collection of data from humanitarian organizations. Had the researcher conducted empirical research, the results might have been different.

Nyamu (2012) carried out a research to ascertain the impact of SCM challenges facing humanitarian organizations in Kenya. The study had two objectives: to establish the challenges facing humanitarian SCM in Kenya and to determine the effects of supply chain challenges on performance of humanitarian organizations in Kenya. The study adopted a descriptive survey research design where a sample of 40 humanitarian organizations was conducted. Factor analysis was also conducted in order to establish the main challenges facing humanitarian SCM in Kenya. The findings of the study indicated that the main challenges facing humanitarian SCM were lack of recognition of the role of SCM in humanitarian operations, delay in humanitarian operations due to domestic barriers, demand uncertainty, challenges in accessing affected population due to inadequate transport modes, high costs inhibiting accessibility of the affected areas and inability to anticipate disaster. The effect of supply chain challenges on the performance of humanitarian organizations were delay in the delivery of the right products, poor information integration and uncertainty demand among others. However, the study did not look at possible solutions to the challenges faced by the humanitarian organizations.

Mohamed (2012) conducted a study to establish SCM practices being implemented by humanitarian organizations in Kenya and their impact on performance. The study had three objectives; to establish SCM practices among humanitarian organizations in Kenya, to determine the relationship between supply practices and performance in humanitarian supply chain practices and to identify the supply chain challenges faced by humanitarian organizations in Kenya. The researcher adopted a descriptive research design. The population of the study included 28 humanitarian organizations operating in Kenya. The study findings indicated that maintaining a good supplier relationship, effective and efficient internal operations, continuous improvement, flexible production processes, use of technology to speed up humanitarian work, inter-organization integrations and simplicity in internal operations are among the practices prevalent among humanitarian organizations in Kenya. The main challenges included customs and habits in the relief area, lack of financial resources, inability to anticipate disaster, bulky materials to be transported, demand and supply uncertainty. The study, however did not prove an in-depth description of the possible solutions to overcome the supply chain challenges faced by humanitarian organizations.

Mbohwa (2010) discussed the challenges, difficulties and problems faced by humanitarian organizations in running logistics systems in Southern Africa, with a focus of some systems in Zimbabwe. Mini case studies of the operations of the World Health Organization (WHO), the International Red Cross Society and the Zimbabwe Red Cross Society, the World Food Programme, UNICEF and the Zimbabwean Civil Protection Organization were discussed. The research classified the challenges faced as lack of trained logistics personnel, lack of access to specialized humanitarian logistics courses and research information, the difficulty in using and adapting existing logistics systems in attending to humanitarian logistics and lack of collaborative efforts that address the area specifically. The study focused only on Zimbabwe and neighbouring countries.

Vorst, et al (2002), identified uncertainty as the major challenge facing humanitarian organizations. They stated that uncertainty could stem from many elements relating to the mission, the organization itself or nature of the demand. They further stated that uncertainty

might arise from inherent characteristics such as what and how much material is demanded, product traits, process fluctuations and supply problem. Vorst, et al also recognized how supply chain configuration and control structures, long forecast horizons, decision complexity, poor information reliability and agency culture may create uncertainty. Regarding uncertainty, Sowinski (2003) quoted the founder of the Fritz Institute stating “disasters are the embodiment of randomness. You don’t know when they’re going to happen, where it’s going to happen, and who’s going to be affected. This is the ultimate execution of a sophisticated supply chain, particularly from an algorithmic planning basis. Every other supply chain is based on predictability”. This is different from players in the private sector who have predictable demand, easy access and cooperative partners. In an ideal situation, demand in humanitarian relief operations would be known/determined at the point of consumption and the supply pipeline would transition from a ‘push’ system to a ‘pull’ system based on more accurate needs assessment and communications back to NGOs headquarter and donors.

The Disaster Management Training Programme (DMTP, 1993), identified transportation and communication infrastructure as one of the barriers to effective delivery of aid. Disaster may degrade the infrastructure of the area to the point where delivery of aid is severely hampered. In addition, disasters occur in areas where transportation infrastructure is in poor condition and cannot handle the huge number of refugees, military vehicles and relief shipments that come in time of disaster. The solution provided for this challenge was that the obstacle would need to be dealt with on a case by case basis due the unpredictable effects of disasters and the vulnerability of the infrastructure.

Communication was also been mentioned as one of the challenges facing humanitarian organizations. Long & Wood (1995) explained that organizational language and terminology may hamper the aid process. For example, some organizations estimate need on a family basis and others use a per person basis. Organizations may use different names and definitions for transportation modes, supplies and the composition of worker teams. Each organization may have its own operating methods and goals and it is only with great effort that they coordinate their plans and share resources. This inability to coordinate effectively is common during emergency response and is only made worse by disputes

between organizations and reluctance to share information which will ultimately lead to duplicated efforts and wasted resources (PAHO, 2000).

Stephenson (2005) identified collaboration as a challenge for humanitarian organizations. According to him, relief actors operate in an environment that does not necessarily encourage coordination. Coordination and management of disaster supply chains is therefore increasingly needed and must be put in place in the humanitarian supply chains. Thomas (2003) identified human resources as a challenge facing humanitarian organizations. Thomas points out that there may be problems with employee reliability stemming from lack of training. There is a notable lack of employees who are knowledgeable in supply chain or logistics management. Thomas points out that “an actor, an osteopath, an extreme sports enthusiast, a nurse and a country manager” were acting as head logisticians in the organizations she studied. “Neither their backgrounds nor their values are geared toward process improvement”. Likewise, Long (1997) notes that “most people from development agencies have backgrounds in public policy or third world development and professional logisticians are rare”. The unpredictable nature of disasters makes it difficult to retain well trained employees and those who have been trained are often volunteers who can only work for short periods before they must return to their “real world” jobs. Organizations may experience as high as 80 percent annual turnover in field logistics personnel (Thomas, 2003) further compounding personnel issues. This results in a constant influx of untrained personnel, inexperienced in the particulars of logistics within the organization and relief as a whole.

Another major problem faced by logistics managers in humanitarian organizations is that the donor has significant influence over where and how aid is distributed while the victim is a third party with little voice in the matter (Long & Donald, 1995). Funding for organizational support and infrastructure is often neglected under donor demands that as much aid as possible is pushed to victims. Thus, distribution channels may suffer as warehouses, equipment, communications infrastructure and training remain unimproved or deteriorating. Christopher & Tatham (2011) identified challenges facing humanitarian supply chain as coordination of operations of a large number of unrelated organizations

varying of materials and services from disaster to disaster; human resources availability, which is often made up of volunteers with little to no training, the scope of the individual disaster, which is always different, differences in the operating environment and the respective politics, which may require compromise. Since disaster relief efforts are characterized by considerable uncertainty and complexity that needs to be properly managed in order to address and implement better responses, some researchers have come up with disaster management techniques aimed at reducing or eliminating the challengers. Disaster management is a key factor that drives successful execution of relief efforts and it begins with strategic process design (Tomasini & Wassenhove, 2009).

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the methodology that was used to carry out this research study. The topic includes the research design, population under consideration, data collection methods, research procedures and the methodology that was employed in the study. The methodology used enabled the researcher to accomplish the research objectives.

#### **3.2 Research Design**

The research method used was the case study approach. The case study method allows the researcher to investigate a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not evident, and in which multiple sources of evidence are used (Yin, 1989). The case study method was the most appropriate method for this research because it is capable of handling both qualitative and quantitative data.

#### **3.3 Target Population and Sampling**

The case study focused on three humanitarian organizations in Kenya operating in disaster situations. These organizations are KRCS, UNICEF and UNHCR. Kenya Red Cross Society emergency preparedness and response section is responsible for disaster management through evacuation and provision of emergency supplies. They are in most cases the first to respond during disasters in the country. United Nations Children Fund is a world leader in procurement of supplies for children. The supply division provides rapid supply response during emergencies and also procures and supplies essential commodities on behalf of governments, and other development partners. The United Nation High Commissioner for Refugees is mandated to protect refugees and resolve refugee problems worldwide. The UNHCR is in most cases, the first to arrive when a forced displacement crisis erupts.

### **3.4 Data Collection**

Primary and secondary data was collected and used in this study. Secondary data was used to answer objective one while primary data, collected using interview questionnaires, was used in answering objective two and three. Primary data was collected from supply chain managers or their equivalent. Supply chain managers were preferred since they understand the supply chain challenges that their organizations encounter. Where the position did not exist, a manager from the department that handles supply chain issues, such as logistics or procurement, was interviewed.

### **3.5 Data Analysis**

The data collected was analyzed using SPSS and according to descriptive information following research questions. The techniques included descriptive statistics with significance tests. Descriptive statistics included graphs, measures of location (mode, median and mean) and percentages. These measures will be used to summarize, organize, evaluate and interpret the numeric information.

In order to achieve objective one, which was to identify supply chain practices adopted by KRCS, UNICEF and UNHCR, a description of the general SCM system in the organizations was carried out. This review focused on the processes and procedures used in SCM. The description helped in gaining an insight into the current supply chain system. The information was collected through literature search, which involved reviewing available materials such as organization information, journals, organizations' manuals and other published materials. To achieve objective two, which was to identify supply chain challenges facing humanitarian organizations in emergencies, an interview questionnaire was used to collect primary data on the challenges facing humanitarian SCM in the three organizations. Section two of the questionnaire focused on collecting data on the humanitarian supply chain challenges and impact of the challenges facing the selected organizations. This questionnaire targeted managers in supply chain department or managers in departments handling SCM. To achieve objective three, which was to identify SCM practices that can be adopted to overcome the challenges, a questionnaire and literature search were used. A questionnaire was distributed to the head of supply

department or equivalent department for them to provide possible solutions to challenges faced during SCM. Literature search from journals, on line databases and other publications were also used in order to obtain possible solutions to humanitarian supply chain challenges.



## **CHAPTER FOUR**

### **DATA ANALYSIS AND DISCUSSION**

#### **4.1 Introduction**

This chapter deals with data analysis, interpretation and discussion of the findings as set out in the research objectives and methodology. The first section identifies supply chain practices adopted by KRC, UNICER and UNHCR, the second section looks at the challenges faced by the three organizations while the last section looks at possible solutions to the challenges. The data was gathered from head of SCM at the three organizations by use of self administered questionnaires and secondary data from the organizations manuals. The interview questionnaires were designed in line with the objectives of the study.

#### **4.2 Overview of Supply Chain Practices Adopted by Kenya Red Cross Society, United Nation Children Fund and United Nations High Commissioner for Refugees**

In addressing this objective, secondary data was collected from the organizations SCM policies and regulations as highlighted in the organizations manuals. Below is a summary of the supply chain practices adopted by the three organizations. The United Nations General Assembly established UNHCR in 1950. The agency is mandated to lead and coordinate international action to protect refugees and resolve refugee problems worldwide. Today, UNHCR is in 125 countries with a staff number of 7,685 people. In Kenya, UNHCR works in the counties of Garissa and Turkana, dealing with refugees and asylum seekers from Somalia, Ethiopia and South Sudan.

The provision of humanitarian relief items is one of the most critical aspects of UNHCR's care and maintenance programme and emergency response operations. The Supply Management Service (SMS) is the backbone of UNHCR's field operations in terms of delivery of relief items. Its aim is to provide rapid, intelligent and reliable supply to persons of concern in emergencies and in protracted humanitarian situations. The objective of SMS is to assure an initial delivery of relief items, emergency response supplies and equipment

within 72 hours, to any corner of the world, in order to address the immediate needs of up to 600,000 people.

The SMS comprises the procurement and contracts and logistics support and inventory sections. The service is responsible for global SCM, operational support, planning and reporting on the use of resources. This includes the procurement of goods and services to support field operations and headquarters, provision of logistical support to field operations, warehouse, stockpile, fleet and asset management. The service also oversees all supply aspects of the newly implemented enterprise resource planning system and supports the roll-out to the field, as well as provision of functional (SCM) training and support.

In 2010, UNHCR developed an improved supply chain strategy, using the principle of global stock management. Global stock management provides SMS with an overview of stocks worldwide through centralized ownership, thereby ensuring greater efficiency and reliability when supplying ongoing field operations. At the same time, global stock management provides the speed, flexibility and adaptability required of an emergency supply chain.

To strengthen logistic network, UNHCR has positioned logistical hubs close to ongoing field operations, in conflict or disaster prone areas and areas facing particular logistic challenges. The goal is to serve the needs of the widest possible range of locations and ensure timely and cost-efficient delivery to persons of concern - both during emergencies as well as for ongoing operations. Stockpile locations include Dubai and Copenhagen and the regional logistical hubs are in Nairobi, Isaka, Douala and Amman. The strategic regional locations/hubs shorten delivery time by road or sea while minimizing the costs of airlifting during emergencies.

According to UNICEF, development and humanitarian supply chains are among the most complex in the world. Ensuring delivery of supplies to children in situations of conflict, disaster or hard to reach areas requires technical know-how, innovation solutions,

collaboration and financial resources. The UNICEF supply chain is divided into eight stages definition of needs; budgeting and planning; procurement; delivery and clearance; inspection; warehousing, distributing and re-order; utilization by end user and monitoring and evaluation.

Definition of needs involves working with government, other NGOs and beneficiaries to design programmes and identify which supplies are needed and in what quantities. Budgeting and planning involves identifying the amount, timing of the required budget, funding sources and scheduling orders to ensure supplies arrive when and where needed. Procurement is the buying of the right product, at the right price and quality through detailed specification, competitive tendering, smart contracting and innovative funding mechanism. Delivery and clearance involves arranging transportation from UNICEF warehouse or direct from suppliers to the port of entry and customs clearance. Inspection involves verifying the supplies received are of the correct quality, condition and quantity. Warehousing, distribution and reorder involves transporting supplies through a series of in-country warehouses or distribution points right to the end user. Monitoring and evaluation is conducted by closing the feeding loop in terms of on-time delivery and whether supplies are fit for the purpose. Monitoring and evaluation ensures continuous improvement of products for children and strengthens the supply chain.

Kenya Red Cross Society is one of the largest humanitarian organisations in the country. Its vision is to be the most effective, trusted and self-sustaining humanitarian organisation in Kenya. The KRCS's Supply Chain Management Division (SCMD) aims at adding value to KRCS by delivering efficient, effective and quality services to the society. The department is responsible for managing the logistics, warehouse, procurement and business development function. The SCMD key strategic objective is to improve service delivery to programmes. The SCMD has trained focal people at the regional offices who are responsible for procurement, fleet and warehouse management. The focal people coordinate with SCMD at the head office to ensure supplies are delivered at the right time, right quality and right quantity.

One of SCMD goal is to improve procurement turnaround time as well as fleet and warehouse sustainability. This includes pre-qualifying suppliers and operationalising the procurement plan. Pre-qualifying suppliers shortens the procurement process especially during emergencies as KRCS already has a list of suppliers with whom they can source supplies. Having a procurement plan ensures efficiency in procurement as programs plan and anticipate their need early on in the year hence allowing SCMD to better plan for the year. Fleet effectiveness and efficiency has been improved by developing and improving relationships with customs and service providers. The supply division focuses on equipping its logistics centre. The centre focus on enhancing the capacity of the supply chain services.

### **4.3 Respondents Views on Supply Chain Management**

In identifying challenges facing humanitarian SCM primary data was gathered from the head of supply chain department by use of interview questionnaires. The instrument was prepared in line with the objectives of the study. The study targeted six respondents comprising of three supply chain managers and their logistic/procurement managers from KRCS, UNICEF and UNHCR. Five questionnaires were filled and returned which was 83.3 percent response rate as illustrated in Table 1.

Table 1: Response Rate

	Frequency	Percent
Respondents	5	83.3
Non respondents	1	16.7
Total	6	100.0

The respondents were asked to indicate the type of their organization. Majority (80 percent) of the respondent reported that their organizations were UN affiliated, 20 percent reported public organization, none of the respondents referred their organizations as private or international as shown in Table 2 below.

Table 2: Nature of the Organization

Nature of Organization	Frequency	Percent
Public	1	20
UN affiliated	4	80
Private	0	0
Total	5	100

The respondents were asked to indicate the duration their respective firms have been in operation. Majority (100 percent) of the organization were above 30 years old. None of the organization was below 45 years of operation in the country. This implies that most organization had experience in procurement and supply process for a long period. The duration an organization has been in operation influences the firm's ability in dealing with various barriers due to experience. Table 3 below shows this information.

Table 3: Age of the Organization

Age (Years)	Frequency	Percent
1 to 10	0	0
11 to 20	0	0
21 to 30	0	0
Above 30	5	100
Total	5	100

The study sought to determine from the respondents whether their respective firms had established supply chain departments. Majority (100 percent) of the respondent reported having supply chain department as shown in Table 4 below.

Table 4: Supply Chain Department

Supply Chain Department	Frequency	Percent
Available	5	100
Not available	0	0
Total	5	100

With respect to supply chain department functions, majority (100 percent) of the respondents cited provision of humanitarian relief items as one of the major functions of their organizations, 60 percent of the respondents reported maintenance programme and 40 percent reported emergency response operations as the major function of the organization. Table 5 below shows this information.

Table 5: Supply Chain Department Functions

Functions	Frequency	Percent
Provision Humanitarian relief items	5	100
Maintenance programme	3	60
Emergence response	2	40

As Table 6 below shows, majority (80 percent) of the respondents reported procurement as a major service in supply chain. This includes the procurement of goods and services to support field operations and headquarters, provision of logistical support to field operations, warehouse, stockpile, fleet and asset management. Seventy percent cited contracts awarding, 60 percent said inventory maintenance services, 40 percent as logistics support service. The supply chain department is responsible for global SCM, operational support, planning and reporting on the use of resources.

Table 6: Supply Chain Services

Supply Chain Services	Frequency	Percent
Procurement services	4	80
Inventory maintenance services	3	60
Contracts awarding services	4	70
Logistics support service	2	40

#### 4.4 Challenges Facing Humanitarian Supply Chain Management

The study revealed that majority (80 percent) of the respondents viewed organizing as the major function of the humanitarian organization, 70 percent of the respondents reported controlling function, 60 percent cited coordinating, 40 percent reported planning and 20 percent reported staffing and directing functions as shown in Table 7 below.

Table 7: Management Functions

Function	Frequency	Percent
Planning	2	40
Staffing	1	20
Organising	4	80
Directing	1	20
Coordinating	3	60
Controlling	3	70

Majority of the respondents agreed that the major challenges faced by humanitarian organization is their inability to anticipate disasters ( 4.87 mean score) that the role of the SCM in humanitarian operations was not recognized (4.52 mean score), Supply chain management was not given emphasis or integrated into the organization systems support (4.01 mean score). They agreed that it is hard to coordinate and manage multiple players along with all the items that need to be delivered (4.00 mean score) as well as keeping complete track, control and accountability of the humanitarian programs and their outcomes. However, the respondents were not sure whether lack of proper planning affects SCM (3.43 mean score). They also disagreed with the statement that it is difficult to establish goals and performance metrics of humanitarian supply chains (2.54 mean score). See Table 8 below.

Table 8: Challenges Facing Supply Chain Management

Challenges Facing Supply Chain Management	Mean	Standard Deviation
The role of the supply chain management in humanitarian operations is not recognized	4.52	0.012
Supply chain management is not given emphasis or integrated into the organization systems support	4.01	1.40
Lack of proper planning in supply chain management	3.43	2.040
It is hard to coordinate and manage multiple players along with all the items that need to be delivered	4.00	0.054
It is hard to keep complete track, control and accountability of the humanitarian programs and their outcomes	3.90	0.100
It is difficult to establish goals and performance metrics of humanitarian supply chains	2.54	0.053
Inability to anticipate disasters	4.87	0.085
Lack of transparency of information and knowledge across the supply chain	3.10	0.150
Lack of training programs on relief supply chain operations	3.84	1.02
Ambiguity of supply chain activities result in resource limitation and high uncertainty thereby making it difficult to assess the uncoordinated commitments of stakeholders	3.51	0.54
Lack of coordination among players inhibit efficiency in disaster supply chain management	3.48	0.11

As Table 9 indicates, majority of the respondents agreed that there is lack of capital investment in supply chain activities (4.62 mean score) and that stringent donor rules and guidelines on financial policies inhibit efficient and effective supply chain management (4.05 mean score). High cost of supplies during disaster period inhibit ability to access affected areas (4.33 mean score) and relief demand is affected by dynamic and hard to measure factors such as local economy, disaster condition, social and political conditions and security conditions (3.82 mean score).



Table 9: Financial Related Challenges

Challenges	Mean	Standard Deviation
There is lack of capital investment in supply chain activities	4.62	1.00
High cost of supplies during disaster period inhibit ability to access affected areas	4.33	1.55
There is very high level of uncertainty in demand	3.91	0.56
Relief demand is affected by dynamic and hard to measure factors such as local economy, disaster condition, social and political conditions and security conditions	3.82	0.55
Stringent donor rules and guidelines inhibit efficient and effective supply chain management	4.05	0.80

Majority of the respondent agreed that poor infrastructure is one of the operating environments that affect humanitarian supply chain management operations (4.4 mean score) while geographic characteristics of the affected region present challenges in assessing affected population (4.23 mean score). Inadequate transportation modes also present challenges in accessing affected areas (4.11 mean score) and that domestic barriers such as country specific policies cause delays in responding to emergency (3.78 mean score) as shown in Table 10 below.

Table 10: Operating Environment Challenges

Challenges	Mean	Standard Deviation
Poor infrastructure in the areas of operation	4.40	0.015
External complications due to foreign relations limit performance	3.71	1.31
Geographic characteristics of the affected region present challenges in assessing affected population	4.23	0.94
Inadequate transportation modes present challenges in accessing affected areas	4.11	1.54
Domestic barriers such as country specific policies cause delays in responding to emergency	3.78	2.00

#### 4.5 Effects of Supply Chain Challenges

In this section, the study sought to determine from the respondents the extent to which they agreed with various statements concerning the effect of supply chain challenges on service delivery among humanitarian organizations in Kenya using a five scale of 1 = strongly agree, 2 = agree, 3 = not sure, 4 = disagree, 5 = strongly disagree and the results are in Table 11 below.

Table 11: Effect of Supply Chain Challenges

Effects of Supply Chain Challenges	Mean	Standard Deviation
Poor infrastructure affects delivery of goods and supplies at the required time and place	4.76	0.005
Lack of proper information affects delivery of the right product	3.85	1.06
Suppliers may affect quantity and quality of delivery	4.21	3.00
Poor storage facilities affect the right condition of product	4.03	1.22
Poor information integration hinders delivery of the products	3.89	0.54
Poor operations management may derail delivery of products	4.00	0.55

The study findings show that majority of the respondents strongly agree that poor infrastructure affects delivery of goods and supplies at the required time and place (4.76 mean score), suppliers affect quantity and quality of delivery (4.21 mean score), poor storage facilities affect the right condition of product (4.03 mean score) and poor operations management may derail delivery of products at the right time (4.00 mean score).

#### **4.6 Strategies Adopted by Humanitarian Organizations in Overcoming Supply Chain Challenges**

In this section, the study sought to find out from the respondents possible solutions to the challenges made. The study findings indicated that majority (80 percent) of the respondents reported proper tendering process as the major solution to supply chain challenges, 60 percent reported the adoption of technology in procurement process as the solution, 60 percent reported proper demand analysis mechanism as a possible solution to the challenges while 40 percent reported use of qualified personnel as the major solution to the challenges faced. These findings are shown in Table 12 below.

Table 12: Strategies Adopted to Overcome Supply Chain Challenges

Strategies	Frequency	Percent
Proper tendering process	4	80
Technology adoption	3	60
Demand analysis	3	60
Use of qualified personnel	2	40

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of key findings, conclusion drawn from the findings highlighted and recommendation made based on the findings. The conclusion and recommendations drawn towards addressing the research objectives of the effect of SCM in humanitarian organizations.

#### **5.2 Summary**

The study revealed that procurement services are the major function of supply chain function of humanitarian organizations. Other major supply chain services were contract awarding, inventory maintenance and logistics support. All the three (UNHCR, UNICEF and KRCS) organizations interviewed had a supply chain department responsible for the procurement and distribution of goods and services.

Supply chain management challenges can be classified in terms of management related challenges, financial related challenges and operating environment challenges. The major management related challenges were inability to anticipate disaster, the fact that the role of SCM in humanitarian operation is not recognized, and SCM is not given emphasis or integrated into the organization system support. The respondents also agreed that it was hard to coordinate and manage multiple players along with all the items that need to be delivered as well as keeping complete track, control and accountability of humanitarian programs and outcomes.

Financial challenges were identified as lack of capital investment in supply chain activities, stringent donor rules and guidelines on financial policies, high cost of supplies during disaster periods and high level of uncertainty in demand, whereas the operating environment challenges included poor infrastructure in areas of operation, geographic characteristics of the affected region, inadequate transportation modes and domestic barriers such as country specific policies. In addition, the study identified effects of the

challenges faced as delayed delivery of goods and services at the required time and place, poor quality of supplies, supplies not in the required quantity, poor storage facilities affect the condition of the products and poor operational management may derail delivery of products at the right time. The study also revealed that KRCS, UNHCR and UNICEF had employed various methods to improve efficiency in their supply chain process. These included demand analysis for relief supply, adoption of technology in the supply chain, improving tendering process by pre-qualifying the suppliers as well as training the purchase and supply employees.

### **5.3 Conclusion**

The study concludes that SCM in humanitarian organizations is faced by numerous challenges such as uncertainty in demand during emergencies, high cost of supplies during emergency and diminishing donor funding. The challenges are threatening the future of humanitarian supply chain process during emergencies. The organizations are therefore opting to engage in development humanitarian operations as opposed to emergency operations. All the organizations interviewed had a development wing dealing with long term projects. Long term development projects are more structured and predictable hence reducing some of the supply chain challenges faced during disasters or emergencies.

### **5.4 Recommendations**

Based on the findings discussed, there is need for uniformity in supply systems and procedures. Most respondents saw inconsistencies in the provision of humanitarian organizations. This study therefore recommend for management to ensure consistencies in supply chain procedures. In addition, management should use effective communication in making employees understand the need for SCM.

### **5.5 Further Research**

Since the study adopted a case study design, it might be possible that the findings may not reflect the challenges of supply chain of other similar organizations on their service delivery to their clients. It is, therefore important that further study be carried out on other organizations in the humanitarian industry to establish whether similar scenarios exist. A

study should also be carried out to establish whether poor performance of NGOs in relation to financial allocation causes the declining donor fund in the developing countries despite arising needy cases.

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## APPENDICES

### Appendix I: Interview Guide

Sections A of the questionnaire contain information on respondents' details and organizations under study, Section B contains questions on challenges facing the supply chain management, Section C contains information on the impact of the challenges while Section D contains information on possible solutions to the challenges.

#### Section A: Organizational Profile

1. Name of respondent organization \_\_\_\_\_
2. Type of organization  

<input type="checkbox"/>	Public	<input type="checkbox"/>	Private
<input type="checkbox"/>	International	<input type="checkbox"/>	UN Affiliate
3. The duration in which the operation has been in operation  

<input type="checkbox"/>	1-10 years	<input type="checkbox"/>	21 – 30 years
<input type="checkbox"/>	11 - 20 years	<input type="checkbox"/>	30 years and above
4. Do you have a supply chain management department?  

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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5. If not who handles the function of supply chain management?  

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#### Section B: Challenges Facing Supply Chain Management

6. State the extent to which you agree with the following statements concerning the extent to which your organization faces the following challenges. Use a scale of 1 = Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree.

No	Challenges Facing Supply Chain Management	1	2	3	4	5
1	The role of the supply chain management in humanitarian operations is not recognized					
2	Supply chain management is not given emphasis or integrated into the organization systems support					
3	Lack of capital investment in supply chain activities					
4	Lack of proper planning in supply chain management					
5	There is very high level of uncertainty in demand					
6	Poor infrastructure in the areas of operation					
7	Relief demand is affected by dynamic and hard to measure factors such as local economy, disaster condition, social and political conditions and security conditions					
8	It is hard to coordinate and manage multiple players along with all the items that need to be delivered					
9	External complications due to foreign relations limit performance					
10	Domestic barriers such as country specific policies cause delays in responding to emergency					
11	It is hard to keep complete track, control and accountability of the humanitarian programs and their outcomes					
12	It is difficult to establish goals and performance metrics of humanitarian supply chains					
13	Inability to anticipate disasters					
14	Lack of transparency of information and knowledge across the supply chain					
15	Lack of training programs on relief supply chain operations					
16	Inadequate transportation modes present challenges in accessing affected areas					
17	Geographic characteristics of the affected region present challenges in assessing affected population					

18	High cost of supplies during disaster period inhibit ability to access affected areas					
19	Ambiguity of supply chain activities result in resource limitation and high uncertainty thereby making it difficult to assess the uncoordinated commitments of stakeholders					
20	Stringent donor rules and guidelines inhibit efficient and effective supply chain management					
21	Lack of coordination among players inhibit efficiency in disaster supply chain management					

7. Please mention any other challenges of supply chain management facing your organization

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**Section C: Effects of Supply Chain Challenges**

8. State the extent to which you agree with the following statements concerning the effects of supply chain challenges facing disaster humanitarian organizations. Use a scale of 1 = Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree.

No	Effects of Challenges Facing Supply Chain Management	1	2	3	4	5
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1	Poor infrastructure affects delivery of goods and supplies at the required time and place					
2	Lack of proper information affects delivery of the right product in the right quantity					
3	Uncertainty in demands inhibits delivery of the right quantity					
4	Suppliers may affect quantity and quality of delivery					
5	Poor storage facilities affect the right condition of product					
6	Poor information integration hinders delivery of the products to the right place					
7	Inaccessible locations may affect delivery at the right time					
8	Poor operations management may derail delivery of products at the right time					

9. Please mention any other impact of the challenges facing supply chain management in your organization

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Section D: Solutions to Supply Chain Challenges Facing Humanitarian Organizations

10. Please provide possible solutions to the challenges highlighted above facing supply chain management in humanitarian organizations during disasters.

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c. \_\_\_\_\_  
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d. \_\_\_\_\_  
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