THE PRACTICES, CHALLENGES AND PERFORMANCE OF HUMANITARIAN LOGISTICS MANAGEMENT IN PLAN INTERNATIONAL ETHIOPIA

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DECLARATION

I, the undersigned, hereby declare that the work which is being presented in this thesis entitled "The Practices, Challenges and Performance of Humanitarian Logistics Management in Plan International Ethiopia" is original work of my own, has not been presented in any of other university and that all sources of material used for the thesis have been duly acknowledged.

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CERTIFICATION

This is to certify that WOLDE WODAJE KEBEDE has conducted this research work on the topic entitled “THE PRACTICES, CHALLENGES AND PERFORMANCES OF HUMANITARIAN LOGISTICS MANAGEMENT IN PLAN INTERNATIONAL ETHIOPIA” under my supervision. This work is original in nature and it can be submitted for the partial fulfillment of the requirements for the award of the degree of Masters of Arts in Logistics and Supply Chain Management.

Shiferaw Mitiku (Ph.D.): _____

Date: _____

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The Researcher

ABSTRACT

Humanitarian Logistics is a very important cluster of activities during emergencies due to natural or man-made disasters in an effort to prevent loss of lives and property. However, the subject is not well researched compared to the business logistics in profit making organizations where profit is their main reason of existence. The main objective of this study was to assess the practices, challenges and performances of a selected non-profit making international organization, Plan International Ethiopia and try to contribute to the research family in the field. The main research design applied for the research was a descriptive type of research design. The data was collected through a questionnaire and distributed to 100 selected staff and partners from Guji and Gedio zones where there appeared a lot of internal displacements which call upon emergency activities from organizations like Plan International Ethiopia. Out of the 100 distributed questionnaire only 80 were used for the analysis as the remaining 20 were either rejected for incompleteness or not returned back at all. The data collected were analyzed through the computer software SPSS and presented using descriptive texts, frequency tables, cross tabulations, percentiles, means and standard deviations. The assessment of the humanitarian logistics practices revealed that Plan International Ethiopia assesses situations well before deploying emergency supplies and its team and the procurement activity is also managed fairly well. The transportation of supplies using third party partners and own fleet is also at its satisfactory level though there are some reservation indicated in the responses for some aspects of transport. Storage and distribution of supplies were found to be satisfactory with some remarks. There are both internal and external factors that challenge the performance of the humanitarian logistics practices of Plan International Ethiopia where lack of appropriate technology and insecurity from the external factors and disorganized processes and procedures are mentioned to be the main factors affecting the performances of the organization. In general Plan International Ethiopia is operating well in the affected areas mentioned and its activities are found to be fairly properly managed. However, the challenges should be seriously considered and need to be dealt with the organization for those challenges in the control of the organization while discussion with partners and the responsible government bodies are required for those beyond control. Flexibility at times demand fluctuations exist both in volume and variety is crucial and hence a contingency plan need to be applicable by the organization as flexibility is perceived to be not performing well. As a future direction for researchers interested in this field, it is good to consider more organizations especially to generalize on the external challenges that affect their performances.

Key words: humanitarian, logistics, disaster, emergency, supply chain, challenge, performance, practice

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CHAPTER ONE

INTRODUCTION

The purpose of this thesis is to identify and examine the logistics practices, challenges that Plan International Ethiopia faces in providing its humanitarian activities to the needy and the performance of the logistics activities. While providing humanitarian activities there are so many challenges that are specifically related to the logistics aspect of the operation. These challenges, unless overcome, may hinder the humanitarian performance as a whole. The logistics activities are usually tagged with very high cost and time consuming where time and cost are viewed as the most critical elements in humanitarian activities. In this introductory chapter of the thesis the reader will have clear understanding of the research objective, background of the study, research problems, research questions, significance of the study, organization of the study and limitations of the study.

1.1 Background of the Study

Natural disasters such as floods, drought, famine and man-made disasters such as wars and refugee crisis, has rapidly increased in number worldwide in the last decade. The year 2010 reported 385 natural disasters that claimed more than 297,000 lives, affecting over 217 million others and causing USD 123.9 billion in economic damages (Guha-Sapir, Vos, Below & Ponserre, 2011).The number of natural disasters has steadily been increasing since 1960 (EM-DAT 2015). This increasing frequency is accompanied by an increased severity in terms of individuals injured or killed as well as the scale of the financial impact of these events (Tatham and Hughes, 2011).

Furthermore, the world faces many structural problems like hunger, lack of proper sanitation and displacement (Van der Laan, Brito and Vergunst, 2009). Therefore, the global demand for humanitarian assistance, especially with regard to disaster relief, is rising and will continue to rise (Christopher and Tatham 2011, Thomas and Kopczak 2005). Given the contributions of US$24.5 bln that international humanitarian assistance received in 2014 (GHA 2015), the resultant procurement and logistical spend of around US$19.5 billion provide an enormous potential for improvement and thus a substantial benefit to those affected by disasters (Christopher and Tatham,

2011).

When such disaster strikes, it becomes a challenge to deliver fast and efficient emergency supplies in at the right time, at the right place and exactly when needed. Thus the efficiency of humanitarian logistics operations that account for 80% of relief operations is crucial in order to ensure a good response when a disaster occurs (Wassenhove, 2006). This significant increase in humanitarian disasters both globally and locally has put into task supply chain professionals to design and manage supply chains that will meet donor expectations and deliver value to those in need.

Mentzer, 2001 described the humanitarian supply chain as the network created through the flow of services, supplies, information and finances between donors, beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries. The goal of the supply chain is to deliver the right supplies, in the right quantities to the right location at the right time (Shepherd & Gunter, 2006). Therefore, disaster relief organizations need to move relief goods more quickly and effectively so that victims can be saved. In addition, Humanitarian Supply Chain Management (HSCM) requires the process of effective and cost-efficient plans, implementations and controls for aid flows (i.e., materials, goods, services, financial resources, information, etc.) from the point of origin to the point of consumption with the intention of meeting the aid recipients' requirements (Thomas and Mizushima, 2005). As a subset of supply chain management, humanitarian supply chain management (HSCM) covers almost all of the functional processes that a commercial supply chain management (CSCM) does, including processes such as sourcing, procurement, inventory management, logistics and distribution, information management, and so forth (Day, 2012). However, unlike the "financial" objectives of CSCM, the primary goal for HSCM is to minimize human suffering more specifically to prevent further loss of life and harm to humans, as well as provide immediate treatment to those with injuries and illness (Beamon and Balcik, 2008). Now a days, this area attracted the attention of both academics and practitioners (Dubey, 2015).

1.2 Background of the Organization

Ethiopia is experiencing one of its worst droughts in decades. In 2015, the two main rainy seasons compounded by an El Niño weather system were well below normal levels. Over 80 percent of national food production is dependent on the success of

these two main rainy seasons. Moreover, over 85 percent of the rural population is engaged in the agriculture and livestock sectors and are entirely dependent on seasonal rains to support their livelihoods. The magnitudes of the needs were staggering. According to the 2016 Government of Ethiopia Humanitarian Requirements Document (HRD), some 10.2 million people were in need of emergency assistance in 2016. In addition, some 2.2 million children and pregnant and lactating women and almost 500,000 children required specialized nutritious products to treat moderate acute malnutrition and severe acute malnutrition, respectively (HRD, 2016). .

A further 5.8 million people require access to safe water and basic sanitation, and some 2 million people require seeds and livestock support. A further 8 million people living in the regions affected are scheduled to receive food and cash support through the existing Productive Safety Net Programme (PSNP, 2016). The Government of Ethiopia (GoE), through the National Disaster Risk Management Commission (NDRMC), has taken a strong leadership role in responding to the existing drought. NDRMC efforts are being supported by humanitarian partners, NGOs, donors and UN Agencies. (NDRMC, 2016).

The geographic dispersion of affected populations and the magnitude of the needs make it very challenging for all actors to deliver an integrated package of support. A strong and effective emergency response system was a critical factor in ensuring the success of the current response. Under the leadership of the NDRMC, the Global Logistics Cluster (GLC) was activated on March 2016 to provide technical support and advice on strengthening the upstream and downstream components of the humanitarian supply chain at national, regional and sub-regional levels (NDRMC, 2016). Relating to Humanitarian Supply Chain Management (HSCM) in Ethiopia, the emergence & development programs are implemented following the occurrence of the major food crises happened in 1950’s which claimed the life of many Ethiopians affected due to drought. Ethiopia has been facing recurring drought and famine due to environmental, social and political factors which subject the large segment of the rural population to vulnerability and food insecurity to the country.

Emergency food relief continues to be a recurrent need in Ethiopia since the Ethiopian

famine of the 1980s, which was so severe that demanded global attention and response. Institutional donors and non-governmental organizations (NGO) have been responding with emergency food relief during crisis years for decades to alleviate hunger. Massive food shortages resulting from severe drought plague the country and drastically hinder production in this predominantly rain fed agricultural economy with 83% of livelihoods in the agriculture sector. The Government of Ethiopia recognized that a system to prepare proactively for cycles of drought while addressing chronic food insecurity was required to protect its citizens. It responded in 2005 by creating one of the largest safety net programmes in Africa, the Productive Safety Net Programme (PSNP, 2016).

Despite the positive impact of PSNP, the need for emergency food aid during times of acute food insecurity and shock still persists, as the resources in PSNP are not enough to address all vulnerable populations and mitigate acute food insecurity. The US Government reports that 25 million people in Ethiopia go hungry every year, the most chronically food insecure being children under five years and women. The Government of Ethiopia's humanitarian appeal of January 2010 identified 5.2 million people in need of humanitarian food relief assistance across the country this year. Emergency food aid programmes administered jointly by the Government, World Food Programme (WFP) and NGOs remain essential to meet the food needs of Ethiopians and control malnutrition and deaths resulting from hunger. Agencies recognized that the magnitude of the need was too large for any one agency to handle alone and joint action would yield greater response and impact. Due to the severity of the crisis in Ethiopia, lobbying efforts for funds and food were heavily focused on Ethiopia and a partnership dedicated to the country was formed. The partnership and its name evolved to become Joint Relief Partnership (JRP) in 1986 with CRS in charge of the coordination and logistics, like it is today. The partnership was reactivated in 2000 under its current form.

The Joint Emergency Operation Plan (JEOP) - a consortium food relief programme implemented by seven NGO partners. Implementation by NGOs of this type of programme is rare, as large scale emergency food aid programmes are usually implemented through WFP channels in other countries. However, through collaborative partnership and continued funding from the United States Agency for

International Development (USAID). Food for Peace Programme (FFP), NGO partners Catholic Relief Services (CRS), Save the Children (SC) US and UK, CARE Ethiopia, World Vision, Food for the Hungry Ethiopia (FHE), and Relief Society of Tigray (REST) are playing active role in addressing emergency food needs across Ethiopia for almost two million people per distribution.

JEOP remains dormant in non-crisis years. It is activated, in close collaboration with the Government of Ethiopia, when chronic food insecurity is exacerbated by emergency shocks, requiring additional coverage and emergency food relief. As a result of a decade of recurrent shocks, JEOP has been operational seven of the last ten years, providing a significant portion of the emergency food needs for the country (Carter, 2016).

Plan International Ethiopia is an International nongovernmental and humanitarian organization implementing its programs in the regions of Oromia, SNNPR, Gambella, Amhara, and in the city of Addis Ababa. Plan International Ethiopia is supporting children and families affected by natural and human-induced crises, and to build the resilience of vulnerable families and their children by providing resources which helps affected households restore their livelihoods after an emergency and provides nutrition to reduce the prevalence of malnutrition. In Ethiopia, Plan International works with the Government and partners to reach affected populations with critical child protection, education, nutrition, water, sanitation and hygiene (WASH) and health interventions. As co-lead of the Education, WASH, and Nutrition Clusters and Child Protection Sub-cluster, Plan International Ethiopia supports coordinated humanitarian responses.

Even if Plan International Ethiopia contributes its own effort in addressing the existing problems in disaster-prone areas of the country the organization is under pressure to respond to emergencies in organized, timely, efficient and appropriate manner. Among the many challenges faced by the organization shortage of resources, lack of potential suppliers, insecurity, poor infrastructure, high uncertainty in demand, supply, timing, location, poor coordination among the multiple players and decision-makers in a humanitarian supply chain, political, cultural and socioeconomic conditions of the operational areas are the major ones.

1.3 Statement of the Problem

Ethiopia is one of the most disaster-prone countries in Africa. Over the last two decades, there have been numerous large and small-scale disasters, both natural and man-made. The most common natural phenomena include drought, famine, floods, hail storms, plant pests and insects. Earthquakes are less frequent but lurk as potentially devastating disasters (NDRMC, 2018).

Ethiopia is experiencing its second severe drought in less than two years. Insufficient rainfall during the 2017 rainy season has led to severe water shortages, catastrophic livestock losses, and failed crops throughout the country. August 2018, the Government of Ethiopia estimated that 8.5 million people in the country would require humanitarian assistance primarily due to increased drought-related needs in southern and south eastern parts of Ethiopia.

Insecurity throughout Ethiopia continues to prompt population displacement, generate humanitarian needs, and hinder relief organizations from delivering life-saving assistance. More than 80 percent of the 2.9 million internally displaced persons (IDPs) identified throughout the country have cited conflict as the primary driver of displacement. Humanitarian agencies are providing assistance to vulnerable populations as security conditions and other access constraints, such as poor infrastructure and permit. Since June 2018, renewed Gedeo-West Guji inter-communal violence has displaced 1,010,934 people. There are 822,187 displaced people (113,760 households) in Gedeo zone, SNNPR alone. The IDPs are spread across 183 Woredas and Dilla and Yirgachefe Towns. In West Guji zone (Oromia), zonal authorities confirmed at least 188,747 people are displaced across 28 Woredas, 30 per cent of whom are female-headed households.

Over the last decade, humanitarian supply chains have become complex as different actors, processes, information, and decisions have to be mixed to serve the needs of the victims affected by a disaster (Blecken, 2010). Their systems are also composed of a series of stages in which materials and information flow through different steps to fulfill the needs of the recipient (Davidson, 2006). Attempting to manage complexity of supply chains in an unsystematic, piecemeal and non-strategic manner can result in

sub optical outcomes, waste of resources and loss of lives thus the effective planning of emergency, the management of supply chains in times of crisis is needed in reducing complexities in the supply chain in order to address and implement better responses (Tomasini & Wassenhove, 2009). The requirement to improve delivery of humanitarian aid has recently received increased attention due to the perceived failure of aid delivery systems following significant crises (Thomas & Kopczak, 2005).

Logistics is the most important element in any disaster relief effort, and it is the one that makes the difference between a successful and a failed operation .But it is also the most expensive part of any disaster relief: it has been estimated that logistics accounts for about 80 % of the total costs in disaster relief (Wassenhove, 2006). Thus, proper investment in logistics in disaster relief provides the main opportunity to develop and implement effective and efficient use of resources in humanitarian operations (Cozzolino, 2012). In addition, a more strategic use of resources allows humanitarian organizations to raise donor trust and long-term commitment by increasingly skeptical benefactors (Scholten *et al*., 2010). Humanitarian organizations are therefore under greater scrutiny to monitor the impact of aid and the arrangement of their entire operations; they have to prove to donors, who are pledging millions in aid and goods, that they are really reaching the ones in need (Wassenhove V., 2006). Similarly, humanitarian organizations need ways to identify and adapt to emerging supply chain trends. To proactively manage the overall performance of their humanitarian logistics, organizations need to know more than inventory positions, delivery dates, and fill rates. This requires end-to-end visibility into factors that drive supply chain performance such as: cash-to-cash cycle time, overall supply chain cost, or perfect order fulfillment (Oloruntoba and Gray, 2005)

Considering the existing challenges faced by NGOs in relation with humanitarian logistics, limited researches in the field of humanitarian logistics, the increase in frequency and the impact of the disasters makes the researcher interested to study the practices, challenges and performance of humanitarian logistics management in Plan International Ethiopia.

1.4 Research Objective

General objective:

The general objective of the study is to evaluate the practices, challenges and performances of Humanitarian logistics management of Plan International Ethiopia.

Specific Objectives:

Based on the general objective of the study above, specific objectives of the study are:

- To assess the overall Humanitarian Logistics practices of Plan International Ethiopia
- To identify the challenges of Plan International Ethiopia's Humanitarian Logistics practices
- To measure the Humanitarian Logistics performance of Plan International Ethiopia

1.5 Research Questions

The study endeavors to get meaningful responses to the following research questions:

- How is Humanitarian Logistics being practiced at Plan International Ethiopia?
- What are the major challenges of humanitarian logistics practices in Plan International Ethiopia?
- What are the humanitarian logistics performance of Plan International Ethiopia?

1.6 Scope of the Study

This study is limited to the practices, challenges and performance of Humanitarian Logistics Management of Plan International Ethiopia. The organization has a head office in Addis Ababa and has been working in four Regional states (Amhara, Oromia, Gambella, SNNPR) and One Administrative city (Addis Ababa) in the country. Due to the time constraints, limited resources and wide scope of the organization operational and geographical areas the study focused only on two regional states namely: SNNPR and Oromia regions that have been working in development and emergency food aid

assistance programs in Ethiopia. The study focuses basically on Plan's operations in the specified operation areas during the years 2016 through 2018.

1.7 Limitations of the Study

Since the study is conducted on practices, challenges and performance of Humanitarian Logistics Management only in Plan International Ethiopia the result and findings do not indicate the practices, challenges and performance of all Humanitarian organizations. The questionnaires were designed to measure the existing situation in the organization and hence didn't consider the cause and effect (correlation) between the dependent and independent variables. In addition, lack of related studies in the study area and resource constraint (time, budget and logistics of accessing the respondents) are considered as limitations for this study.

1.8 Significance of the Study

The study enriches Humanitarian Organizations staffs approach to Humanitarian logistics planning, implementation and evaluation of humanitarian logistics. The study comments policies towards Humanitarian logistics planning, implementation and financing as powerful management tools to improve the way Humanitarian organizations and partners can achieve greater stakeholders' satisfaction and to further embed institutional capabilities. The study is also beneficial to humanitarian organizations, donor agencies, procurement and logistics professionals and stakeholders involved in humanitarian logistics project/ program planning and management.

Although, the study was conducted within Plan International Ethiopia, it will also be relevant to other NGOs involved in humanitarian logistics. In addition, the study provides insights that help build additional knowledge in the study area by filling knowledge gap that currently exist. Finally, the study is also important for humanitarian organizations to understand the various factors that determine the success of humanitarian logistics or failure during service delivery.

1.9 Organization of the Study

The study is organized in to five chapters. The first chapter highlights introduction, provides background information, mentions objectives, research problems & research questions, scope and limitations of the research. In the second chapter, related

theoretical literature and empirical study on similar or related topics are reviewed and accordingly a conceptual framework was developed. The third chapter is about research methodology focusing on the design & approach of the research and the source, population, collection procedures & analysis method of data used. The fourth chapter of the study deals with the results revealed and thoroughly discusses the findings of the research while the fifth chapter is dedicated to the summary, conclusion and recommendation part of the study where the major concepts are summarized, conclusions are drawn and researcher's recommendations based on the findings are made.

1.10 Definition of Terms

Disaster: It is an instance which results in danger to human lives, properties and health. It often results in a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of affected society to cope using only its own resources (WHO, 2002).

Disaster/ Emergency management: Disaster management, interchangeably referred to as emergency management, series of activities in helping the people to recover their conditions from the disaster occurred in that particular region (WHO, 2002).

Disaster management cycle: It illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. (Kovacz and Spens, 2012)

Humanitarian aid: it refers the material and logistic assistance to people in need. It is usually short-term help until the long-term help by government and other institutions replaces it. Among the people in need homeless, refugees, victims of natural disasters, wars and famines belong. The primary purpose of humanitarian aid is to save lives, reduce suffering and respect to human dignity. (Christopher, M.G., 1998).

Humanitarian Logistics: It is a branch of logistics which specializes in organizing the delivery and warehousing of supplies during natural disasters or complex emergencies to the affected area and people (Christopher, M.G., 1998).

Relief chain: It is the provision of humanitarian assistance in the forms of food, water, medicine, shelter, and supplies to areas affected by large-scale emergencies (Kovacz and Spens, 2012).

CHAPTER TWO

RELATED LITERATURE REVIEW

This chapter briefly introduces and provides a systematic literature review on the works of various scholars in the area of practices, challenges and performance of humanitarian logistics in international humanitarian organization. It includes definition and concepts such as, humanitarian logistics management, humanitarian supply chain performance, humanitarian supply chain versus commercial supply chain, humanitarian supply chain sourcing, Internal and external coordination, flow of aid materials, funds, people and information, empirical review related to the topic of the study, research gaps and conceptual framework. Based on the literature review, this thesis sought to compose and evaluate those research questions and identifies measurement variables which are used for answering those research questions in designed to assess humanitarian logistics performance of Plan International Ethiopia.

2.1 Theoretical Literature Review

2.1.1 Humanitarian Logistics

Humanitarian relief logistics is defined 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 the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people (Thomas and Kopczak, 2005). Indeed, logistics serves as a bridge between disaster preparedness and response (Thomas, 2003); therefore, humanitarian logistics is crucial to the effectiveness and speed of response for major humanitarian programs.

Humanitarian logistics is characterized by large-scale activities, irregular demand and unusual constraints (Beamon and Kotleba, 2006). The problems can range from a lack of electricity supplies to limited transport infrastructure including ‘controlled’ environment with some minor variability (e.g. traffic congestion) (Kovacs and Spens, 2009). Humanitarian organizations are mostly driven by donors (i.e. supply) (Tomasini and Van Wassenhove, 2009). The customers (aid recipients) actually have no choice and, therefore, ‘true demand’ is not created in humanitarian logistics (Kovacs and Spens, 2009).

In the initial days of the deployment phase, most of the critical supplies arriving to the disaster are sourced from an organization's global pre-positioned stocks (Balcik and Beamon, 2008). Cost is one of the reasons for pre-purchasing the supplies as they are able to purchase them at a reasonable price (Salisbury, 2007). Once disaster occurs, demand increases dramatically and suppliers will often raise their prices in response. Relief organizations adapt the in-advance purchase strategy and store in the pre-positioned warehouse to react quickly (Beamon and Balcik, 2008). There are several challenges that relief organization faces in order to ensure the smooth flow of the relief logistics. Difficulty in creating an effective pre-positioning plan includes uncertainty about whether or not natural disasters will occur and, if they do, where and with what magnitude (Rawls and Turnquist, 2010).

2.1.2 Humanitarian Supply versus Commercial Supply Chain

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 (Shepherd and Gunter, 2006).

Similar to a commercial supply chain, supplies flow through the relief chain via a series of long haul and short haul shipments. Supplies flowing through the relief chain primarily consist of pre- positioned stocks in warehouses, supplies procured from the suppliers, and in-kind donations. Supplies are shipped from various worldwide locations to a primary warehouse, which is usually located near a sea or airport. Next, supplies are shipped to a secondary hub (a large, permanent warehouse typically located in a larger city). At this secondary hub, supplies are stored, sorted and transferred to tertiary hubs (local distribution centers).

Scholars have clearly pointed out, that in spite of similarities, there are dissimilarities between commercial supply chain and HSC network. The business supply chain network is driven with an objective to maximize supply chain surplus; on the other hand, the HSC network is driven with an objective to reduce the potential loss of human and infrastructure (pre-disaster) and provide maximum relief and ensure quick

recovery during the post-disaster phase (Holguin, 2012).

2.1.3 Principles in Humanitarian Logistics

Humanitarian principles define what humanitarian aid is: delivering life-saving assistance to those in need without any adverse distinction. They distinguish humanitarian aid from other activities; for example those of political, religious, ideological or military nature. Adherence to the humanitarian principles facilitates access and acceptance, and helps humanitarian workers carry out their work. Humanitarian operations are executed as per four guiding principles. These guiding principles are humanity, neutrality, impartiality and independence (Van Wassenhove, 2006).

The four guiding humanitarian principles are grounded in international humanitarian law as endorsed by the 1949 Geneva Conventions. The United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), describes the four guiding principles as follows. (UNOCHA, 2006)

Humanity: Human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human beings.

Neutrality: Humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.

Impartiality: Humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress and making no distinctions on the basis of nationality, race, gender, religious belief, class or political opinions.

Independence: Humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

2.1.4 Characteristics of Humanitarian Logistics Operations

Humanitarian logistics operations are classified in to two major categories. The first one is relief activity and the second one is development activity. The first category is engaged in activities related to the short term life saving and crisis management activities while the second one involves in long term activities in order to return the community back to its original state of self-sufficiency and sustainability. (Thomas, 2004), (Russel, 2005). Accordingly, Humanitarian organizations also group

themselves as those which are engaged in emergency activities and those engaged in development activities. Humanitarian relief operations and logistics are like two sides of a single coin. Unless supported by an efficient logistics system it is unthinkable to perform humanitarian logistics operation.

According to Thomas (2003), logistics is a crucial element of humanitarian relief operations due to three reasons. Firstly, preparation phase of relief operation is very important for immediate disaster response where preparation phase like effective procurement, supplier relationship and prepositioned stock are performed by the help of logistics operations. Secondly, logistics should also support by availing food, water, shelter and medication for the logisticians themselves on the site. Thirdly, logistics is also used to document all activities so as to be used as lessons learned after the disaster so that it can be used for future planning and response activities.

2.1.5 Actors in Humanitarian Relief Operations

International relief organizations, host governments, the military, local relief organizations, and private companies, which may have different interests, capacity, mandates and logistics expertise are identified as actors in a typical humanitarian relief operation (Balcik, Beamon, Krejci, Muramatsu and Ramirez, 2010). These actors need to be coordinated to provide the necessary humanitarian support during disasters. None of these actors individually has sufficient resources to respond to major disasters (Bui, Cho, Sankaran & Sovereign, 2000). The donors, aid agencies, Non-Governmental organizations, Governments, Military, Logistics providers and other third party service provider institutions are considered as actors that involve in providing aid for the affected people.

2.1.6 Measuring Performance of Humanitarian Logistics Operations

The ultimate goal of humanitarian logistics is to provide support to disaster victims in the form of food, shelter, closing, medicines, water, etc. Like their commercial counterparts, humanitarian logistics also need to have a performance measurement scheme so as to judge if the operations are failures or successes. According to (Gunasekarana, 2004), performance measurement and metrics are crucial for organizations in setting up objectives and future directions. Performance measures are objective and quantitative indicators of various aspects of the performance.

Performance measurement indicates the process of defining, observing and using these measures (Poister, 2003).

According to (Neely, Gregory and Plats, 1995), performance measurement is defined as the process of quantifying the effectiveness and efficiency of an action. Effectiveness is related to what extent the level of customers' needs are covered while efficiency measures how economically these needs have been covered (Schulz & Heigh, 2009). Effective performance measurement systems would assist relief chain practitioners in their decisions, help improve the effectiveness and efficiency of relief operations, and demonstrate the performance of the relief chain, thereby increasing the transparency and accountability of disaster response. Metrics that are most important in an organization should be used to develop an appropriate organizational performance measurement system (Gunasekarana, 2004).

To measure performances of an organization different models can be applied. Out of them a popularly accepted performance measurement model developed and endorsed by the supply chain council as a cross industry standard for supply chain management called the Supply Chain Operations Reference (SCOR) model can be mentioned (Thilakarathna, Dharmawardana and Rupasinghe, 2015).

According to the SCOR model, five performance attributes should be considered in assessing the performance of a logistics function in place. These performance attributes are delivery reliability, responsiveness, flexibility, cost and asset management efficiency. The first three (delivery reliability, flexibility and responsiveness) attributes are those facing towards customers while the next two (cost and asset management efficiency) are those facing towards the organization. Delivery reliability is about performance of the logistics function in delivering the right product to the right beneficiary at the right time and right quantity. Responsiveness on the other hand emphasizes on the speed at which the logistics function provides products to the beneficiaries. Flexibility is about ability in responding to changing demands in terms of both variety and volume. Cost stands for the costs associated with running the logistics function while asset management efficiency is about efficiency in managing assets so as to satisfy beneficiaries' demand (Thilakarathna, Dharmawardana and Rupasinghe, 2015)

2.1.7 Infrastructure Situational Factors

Infrastructure situational factors, such as the availability of a road network, railway, airports, power supply, play an important role in the performance of humanitarian logistics (Chakravarty, 2011). Indeed, the existence of a well-developed road infrastructure, for example, facilitates the logistical operations, while a poor road network tends to disrupt and slow down the distribution of relief items. The presence of an airport close to the disaster location facilitates, for example, the delivery of relief aid.

2.1.8 Transportation

Transportation makes it possible for assistance to reach those in need (Jane.K *et al*., 2013). Transportation in a disaster or humanitarian emergency can run the gamut. It can involve global sourcing, drop shipment, military transport, commercial transport, non-commercial transport, third-party logistics firms, freight forwarders, charter aircraft, or even local transportation such as mules and donkeys. Goods are often brought into a country at an entry point and then moved to collection sites run by relief organizations. In relief work, both in disasters and complex humanitarian emergencies, damaged infrastructure, inaccessible infrastructure, and the lack of infrastructure needed for large-scale assistance lead to bottlenecks, delays, and congestion at entry points to the disaster area.

Transportation is the element in the logistics chain that makes it possible for assistance (the arrival of goods from abroad, as the movement of them within the country) to arrive at the site where it is required. When defining the transportation, it is important to take into consideration not only the necessary means and resources to move the supplies, but also to determine what the actual possibilities and alternatives are to deliver assistance. Alternative means, methods, and routes should be considered as a matter of course. Supplies should not just be moved in any way and at any time, but that the challenge is to do so safely and in a timely manner. This requires maybe the use of all the available means. When deciding which means of transport to use, we have to think about two tasks: the needs on the ground (urgency, type of supplies, distance of the destination, other conditions, as routes, weather, etc.) and feasible forms of transport (available means, cost, accessibility, transmission capacities, etc.) (Van Wassenhove and Samii, 2003).

International humanitarian operations may be hindered by administrative and logistical bottlenecks because of poor infrastructure in the aid-receiving region and the multiplicity of agencies and governments (Van Wassenhove and Samii, 2003), and are often in conflict zones, thus hindering efficient delivery and distribution of relief cargos to the needy.

2.1.9 Internal/External Coordination

The coordination within an NGO and outside with the other stakeholders is deemed pivotal for the success of humanitarian aid operations. On the sourcing end, the coordination between an NGO and its donors can be demanding due to the importance of donations to an NGO's operations as well as the heterogeneity of goals from different groups of donors. At the same time, within a humanitarian supply chain, the coordination between an NGO and other players (e.g. other NGOs, governments, etc.) is complicated due to the unique characteristics of this system. In addition, the coordination within humanitarian supply chain is extended to other fields such as governments, militaries, other NGOs, etc. All these facts have made the coordination very challenging for any NGO that participates during disasters. It is worth mentioning that trust and information are two key success factors for the coordination within this system. Both factors have gained academic researchers' attention and there exist two streams of literatures focusing on trust (Tatham and Kovacs, 2010) and information (van der Laan, 2009).

2.1.10 Communication and Information

Regardless of the type of uncertainty affecting the humanitarian supply chain, information management can help to reduce the complexity brought about by uncertainty. That is what several initiatives driven by the humanitarian agencies attempt to do through designing a common language, increasing visibility, and promoting collaboration. Disaster relief operations are carried out by humanitarian agencies who, unlike private companies, do not share the same explicit profit incentives to collaborate and exchange information. Information management can help increase visibility and foster transparency in the humanitarian supply chain. Overall, agencies investing in information management can help facilitate the

response by creating greater visibility of the needs and more accountability among the different actors involved. In the typical commercial supply chain framework, three types of flows occur (i.e., materials or goods/services, information, and finance). This is also the case within humanitarian supply chain. (Van Wassenhove and Samii, 2003)

According to Mentzer, (2001) framework, the information flow is bi-directional while the financial flows occur from the customer to the upstream suppliers, and the goods flow from upstream down to customers. In this study, the aid elements (e.g., goods/services and funds) are constructed as flowing out to affected areas whereas information and people are bi-directional. The component of "sourcing" purposely emphasizes the unidirectional input flows for the humanitarian supply chain system. Similar to commercial supply chains, bi-directional information flow is necessary for humanitarian supply chains. It is worth mentioning that "people" is one of the crucial aid flow elements in NGOs' humanitarian operations management.

2.1.11 Challenges in Humanitarian Logistics

The conditions under which a humanitarian organization's staff must work are extremely chaotic. Physical infrastructure such as roads, bridges and airports are often destroyed. National and local government, through which humanitarian organizations must often coordinate their activities, may be severely impacted, or even uprooted in the case of a conflict situation (Dr. Ahmed, 2016). Lack of Recognition of the Importance of Logistics: Most humanitarian organizations have two broad categories of activities: programs and support services. Lack of Professional and Inadequate Use of Technology plus Lack of institutional learning limited collaboration.

According to Martin the possible challenges in humanitarian logistics are categorized in three dimensions, these are: Physical: Access to affected areas due to destruction or absence of infrastructure, Infrastructural accessibility to seasonal climate influence, Limited choices as regards routes and traffic notes, Inefficient service sector in developing countries, Insufficient and unreliable transport, handling and storage capacities, Insufficient quantities of aid goods, "fair" and/ or efficient distribution difficult, Price agreements of local transport providers, Security aid goods and personnel Information related: Difficult needs assessment and exception of the beneficiaries, Limited IT infrastructure, little funding available, Incompatibility of the

systems within the companies and service providers involved, Hardly any central data recording, coordination and administration of data within the aid agencies, Tacking so shipments rarely possible in areas in crisis and developing countries, Lack of communication and exchange information between organizations (vertical and horizontal). Organizational: Often uncertain political conditions, Bureaucracy and corruption in the recipient countries, Lack of transparency as regards responsibilities, Involvement of commercial and non-commercial organizations, Few staff trained in logistics within the aid agencies, instead many volunteers and people without experience, Lack of adequate facilities for logistics training in developing and newly industrialized countries, Bias towards donation for short-term aid projects rather than investment in an efficient structure of systems within the aid agencies, Stakeholder coordination and cooperation (Martin, 2013).

Logistics is seen only as a secondary function and is not anchored within the organization at all, or only to an operational extent. But the effectiveness of humanitarian aid for people in emergency and crisis situations is essentially dependent on logistics capabilities. Logistics can also be a success factor for aid agencies in the completion for donations, it facilitates or accelerates the whole chain of humanitarian operations, from purchasing and storage to distribution of aid goods, and it also lends transparency (Martin, 2013).

According to Michael, the principal interrelationships between logistics and other organizational functions are: the relationship between the marketing function (or non - commercial equivalent) and the physical distribution sub function of logistics, and the relationship between the manufacturing function and the physical procurement and materials management sub functions of logistics. However, for the organization to be properly served by an effective logistics system, similar coordination problems have to be solved in both interrelationships. Logistics is concerned with activities from throughout the enterprise. These activities interact for purposes that are to the enterprise's benefit. Materials flows affect all parts of an organization and its relations to other organizations (Michael, 2006)

The twin objectives of logistics are: to minimize logistics costs, and to optimize customer service levels (and ideally to do both simultaneously). These objectives are achieved by trade-offs between these sub functions and functions so as to minimize total logistics costs and/or optimize total logistics service levels. To take the first objective, costs may be deliberately incurred in one function or sub function in order

that the performance across several functions or sub functions may be optimized. To put it more simply, total logistics costs can be minimized by balancing individual logistics costs. For example, the more depots a company owns, the less its transport costs but the more its depot investment and running costs. Total logistics management requires to be built around the search for cost and service trade-offs to improve efficiency. There is a need clear need for the development of information systems sophisticated enough to support the demands of comprehending the detail of costs trade-offs, cost versus service level trade-offs, and trade-offs within varieties of service. Equally as important is having the skilled personnel to conduct logistics management (Michael, 2006).

2.1.11.1 Accessing Disaster Areas

Recent natural disasters have emphasized the importance of emergency relief response logistics. One of the most serious problems affecting the modern world is the vulnerability of nations or regions in relation to natural disasters such as earthquakes, floods, drought or man-made crises: civil unrest, war, political/tribal disturbance (Gyöngyi and Karen, 2012). There are various difficulties that can occur during a humanitarian aid operation. One of these is to access disasters which occur in landlocked countries, or landlocked regions of maritime countries, making the logistics of the response operation even more complex as, in the first case, it requires a neighboring state to be involved for transit (Michael, 2006).

2.1.11.2 Transport Infrastructure

From the point of view of access and supply chain organization, what immediately became apparent was the barrier presented by the destruction of the local port which had the inevitable effect of diverting virtually all the first phase response through the main airport of Port-au-Prince which itself did not entirely escape damage. In particular, the control tower was damaged affecting flight management for several days immediately after the earthquake. A further hindrance to the relief effort was the destruction of the headquarters of the United Nations Stabilization Mission in Haiti, which severely hampered the UN’s ability to respond and coordinate activity in the immediate aftermath of the earthquake. The earthquake damaged almost every part of the country’s transport infrastructure with air, land, and sea transport facilities all

affected. The overall picture was one of large scale, chaotic delivery of aid via the airport, where cargo rapidly accumulated for need of local distribution capability, and by sea where damage to both the port infrastructure and superstructure necessitated sea-basing using, for example, military carriers from which aircraft and helicopters fulfilled final delivery requirements (Michael, 2006).

2.1.11.3 The disaster management cycle

The preparedness phase involves building the capacity to respond to a disaster, such as working with communities to ensure they know evacuation options, pre-positioning emergency response supplies and building organizational capacity to respond to disasters. Pre-positioned emergency response supplies tend to be less varied, as they are specific life supporting items, such as food, medical supplies, water and sanitation equipment, shelter, household kits, etc. (Dr. Ahmed, 2016).

The response phase occurs immediately after the disaster, and activities are focused primarily on saving lives and preventing further damage. Humanitarian operations distribute food, medical supplies and other necessities of life to affected populations, and lives be dependent on the speed of logistics activities. The response phase may last from days to months, depending on the scale of the disaster. During the transition phase NGOs begin to look at providing ongoing assistance, such as temporary shelter and revitalizing basic social services. NGOs also plan strategically to transition from implementing response activities to longer term recovery and mitigation programs. (Dr. Ahmed, 2016).

Logistics activities such as identifying suppliers to in either local or international markets to provide supplies for longer term programs, ensure a smooth transition. The recovery phase involves aiding communities to return to their conditions prior to the disaster. These activities include: training people and distributing supplies for livelihood, building reconstructing houses and infrastructure. The recovery phase represents a significant proportion of the duration and funding of a humanitarian operation and may last from 5-10 years. (Michael, 2006).

Mitigation involves increasing the resilience of communities to natural hazards to reduce the impact of disasters, these activities includes: planting mangroves to protect coastlines against cyclones, constructing dams and reinforcing buildings (Dr. Ahmed, 2016).

2.2 Empirical Literature Review

2.2.1 Humanitarian logistics Practices and the critical success factors

A review of literature reveals that a lot of research on the practices, challenges and performance of Humanitarian Logistics Management has been undertaken in developed countries context and their applicability in the developing countries such as Ethiopia is yet to be explored. (Jane, 2010). Developing countries in Asian continent have carried some studies on challenges and performance of humanitarian logistics management while in Ethiopia some studies have focused on Logistics Gaps Analysis and Mitigating activities. Therefore, it is imperative to do an assessment on the Practices, Challenges and Performance of Humanitarian Logistics Management in Plan International Ethiopia.

Thomas Kiura Nyamu (2012) in their research entitled the "Impact of supply chain management challenges on humanitarian organizations in Kenya", identified lack of recognition of the role of supply chain management in humanitarian operations, delays in humanitarian operations due to domestic barriers, demand uncertainty, challenges in accessing affected population due to inadequate transportation modes, high costs inhibiting accessibility of the affected areas and inability to anticipate disaster were the main challenges that have impact on humanitarian logistics.

Korpela and Tuominen (1996) identified the logistics critical success factors and determine their importance. There are five CSFs: reliability, lead time, flexibility, cost-effectiveness, and value-adding. Reliability is the ability of delivering products in right quantities without damage; lead time means the time interval between placing an order and receiving the order; flexibility refers to the capacity of arranging urgent deliveries; cost-effectiveness in meeting demands is a major characteristic of a successful supply chain; value-adding entails the ability to offer services exceeding the basic requirements. They also define six enablers applying for the CSFs: management systems (effective logistics strategic management system); process integration (a process-based approach to integrating production, sales and marketing, and distribution into a customer-oriented logistics system); information systems (effective strategic and operational information systems); organization (the

effectiveness and flexibility of the logistics organization); technology (utilization of modern technology in different parts of the logistics system); relationships (long-term and contractual relationships with both customers and providers of logistics services).

Razzaque and Sheng (1998) used a comprehensive literature survey to identify the CSFs with regard to organizations outsourcing their logistics activities. These are internal and external communication, development of user-provider relationships, customer focus, standards establishing and performance monitoring against the standards, importance of human factor, knowing the payback period for outsourcing activities.

2.2.2 Challenges in humanitarian logistics and their impact

A study conducted by Saeyeon, Dong-Wook, Beresford and Pettit (2010) on challenges in humanitarian logistics management in Asia: An empirical study on pre-positioned warehouses revealed that there are about seventeen risk elements that can generate challenges while operating in pre-positioned warehouses.

These elements are high asset maintenance cost, high inventory cost, uncertain demand, lack of confidence in what to stock, failure in forecasting stock level, high transport cost, difficulties in justifying funding, limited space, infrastructure, stock out, breakdown, dependency on logistics service providers, poor quality of goods, poor performance of logistics service providers, local staff quality, natural disasters and social instability. These risks contribute for the generation of challenges that hinder the performance of humanitarian logistics operation and can be categorized under external and internal problems. (Saeyeon *et al*, 2010).

Van Wassenhove (2006) also identified coordination and management of disaster humanitarian logistics has challenging problems. The supply network is huge and complicated with numerous players (donors, NGOs, government and suppliers), and it is hard to coordinate all of them along with all the items that need to be delivered. Despite the different cultural, political, geographical and historical differences among them, collaboration and specialization of the tasks between NGOs, government and private business are increasingly needed in the humanitarian supply chains. Despite being experienced and aware of the key points in humanitarian supply chains, people in charge of logistics and supply chain management in most NGOs or other

humanitarian organizations are not often specialized in this area, thus they are not experts in the tools for solving the problems that might occur during the operations. (Blecken, 2010) showed in their research that lack of motivation to measure performance in the non-profit sector exists in South-East Asia, only 20 per cent of the humanitarian organizations measure performance consistently while 55 per cent do not monitor and report performance measurement indicators at all. The remaining 25 per cent of the humanitarian aid agencies only use a few indicators. Regarding performance measurement, development potential is given. Humanitarian organizations need to increase their research efforts in this respect to ensure continuous performance-improvement in disaster relief operations.

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 neighboring countries. (Mohamed, 2012)

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 18 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 19 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 20 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 (Tomasini & Wassenhove, 2009).

2.3 Conceptual Framework

There are many factors that impact the effectiveness of humanitarian logistics. These factors being numerous, and having theoretical backing from past literature and performance reports, have been proven to have an impact on effectiveness of humanitarian logistics. These study however, focuses on the practices, challenges and performance of humanitarian logistics delivered by Plan International Ethiopia on a few factors as depicted in this conceptual framework. These factors include

humanitarian logistics planning, communication, coordination and management, transporters' availability and infrastructural issues. The conceptual framework is a combined modification of the conceptual frameworks developed by prior studies (Yalcin, Ozpolat, & Hales, 2015). Based on this the study developed conceptual model to indicate the interconnection between dependent and independent variables.

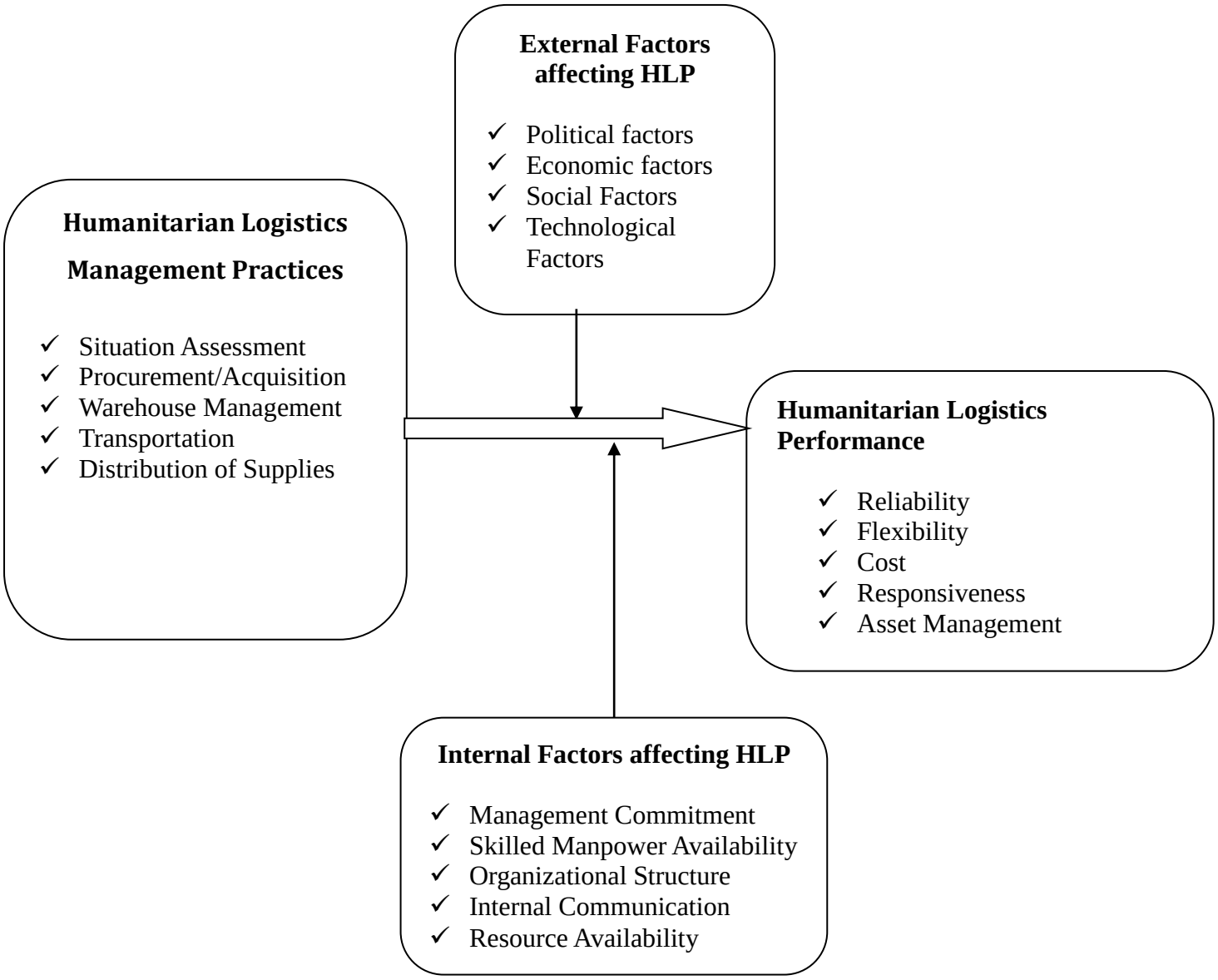

Fig 1. Conceptual Framework

Key: ⇨ The variables have direct contribution and impact on the other variables

→ The variables, if overcome, may not have significant impact or contribution on the other variables

2.4 Identified Literature Gaps

From the literature review, it is evident that the main focus has so far been on the role of logistics on supply chain performance within the private, i.e., commercial supply chains and public sector companies and not within the humanitarian aid sector. Humanitarian organizations also need to integrate their supply chain management activities in order to deliver to the beneficiary within the required time and at the least possible cost in order to save more lives. The existing literature has majorly focused on supply chain challenges on performance of humanitarian organization without acknowledging the role it can play to enhance the performance of humanitarian organizations. Disaster supply chains, therefore, are one of the environments that need the performance of the supply chain due to the high degree of uncertainty that must be dealt with as well as the complexities that result from high levels of stress and uncertainty. According to Christopher (2000), the original essence of the disaster management, swiftness and agility, should be the heart of humanitarian logistics. The studies have also majorly focused on supply chain management challenges facing humanitarian organizations in different countries without clearly providing adequate solutions to overcome this. The focus of studies has also been on establishing supply chain management practices being implemented by humanitarian organizations without focusing on humanitarian logistics as a key factor in achieving supply chain performance. This, therefore, creates a significant research gap on the role of humanitarian logistics on supply chain performance in Non-Governmental organizations in Ethiopia.

CHAPTER THREE

RESEARCH METHODOLOGY

Researches are done by having an adequate data collected from a research area. This third chapter of the study provides readers clear information on the data and data related activities. The study area described first followed by the research approach applied to gather information. The research design is also explained here. To conduct this research data should be collected and hence the source of data, the population and sample for the data, data collection procedures and the method used to analyze the data collected are discussed well.

3.1 Description of the Study Area

The study is conducted in Plan International Ethiopia. Plan International Ethiopia is an International non-governmental and humanitarian organization implementing its programs in the regions of Amhara, Oromia, SNNPR, Gambella and Addis Ababa city administration. Out of the four regional states and one city administration the researcher selected Guji and Gedio Zone of Oromia and SNNPR respectively. The reasons for selecting the study areas are the organization is currently providing humanitarian and emergency responses to the affected people in the zones due to the recently occurred ethnic based conflicts. In addition, Plan International Ethiopia head office in Addis Ababa is also included in the study to get more information on the topic of the research.

3.2 Research Approach

The research followed basically qualitative research approach where worded statements specific to the research questions were incorporated in the questionnaire and responses from respondents were collected through a five point Likert scale to achieve the stated objectives. The respondents indicated their extent of agreement or disagreement using the scale.

3.3 Research Design

The nature of the research triggered the investigator to use descriptive type of research design. Accordingly, with the descriptive method the study focuses on the determination of the frequency with which an event occurs and how variables are

related in a particular context. Once the data was collected through the designed questionnaire, the result is presented using descriptive texts, frequency tables and figures.

3.4 Source Population

Program managers, logistics and procurement officers and supply chain professionals from head office and selected regional program area offices and Humanitarian relief distribution workers in emergency areas were the source population of the study. (Table 1).

Table 1: Source Population and Samples

Position	Target offices				Total	
	Hawassa office		Addis office			
	Population	Sample	Population	Sample	Population	Sample
Senior Management	4	1	15	5	19	6
Project Manager/Coordinator	10	3	3	1	13	4
Project Officer	8	2	2	1	9	3
Finance Officer	8	2	2	1	9	3
Other (drivers, distributors, etc.)	171	55	29	9	200	64
Total	200	63	50	17	250	80

3.5 Sampling Technique

The study uses multistage sampling technique. The reason behind using the technique is that the study includes program managers, logistics and procurement officers and supply chain professionals from head office and selected regional program area offices and Humanitarian relief distribution workers in emergency areas as respondents.

3.6 Sample Size Determination

In terms of resources (time, finance and manpower) it is not possible to study all the regional program area offices where Plan International Ethiopia intervenes. The employees in Plan International Ethiopia who are directly responsible for the operations in the researcher's interest area are estimated to be 100. In order to make the sample size representative and convenient, a total of 80 respondents drawn from Plan International Head Office staffs, SNNPR and Oromia regional program area offices and humanitarian relief distribution workers from the emergency sites are used as sample for this study. The sample size is determined with the sample size determination formula, $N/1 + N (e)^2$.

3.7 Sources and Instruments of Data Collection methods

The researcher used both primary and secondary data. The primary data was collected through a self-administered questionnaire. The questionnaires targeted Program managers, logistics and procurement officers and supply chain professionals from head office and selected regional program area offices and Humanitarian relief distribution workers in emergency areas. In order to enrich the study different related literatures, journals and studies have been reviewed as a secondary data. The questionnaire had have five parts: Part A focuses on the general particulars of the organization, Part B focuses on socio demographic characteristics of respondents. The rest three parts are questions related to the practices, challenges and performances of Humanitarian logistics management of Plan International Ethiopia. This part gives each respondent an opportunity to reflect in detail how they perceive practices, challenges and performance of humanitarian logistics management of Plan International Ethiopia. The respondents also had an opportunity to outline other factors outside the researcher‘s scope in relation to humanitarian logistics management.

3.8 Data Collection Procedures

Interviewer administered questionnaire was employed to collect the data. The questionnaire was prepared in English. Data collectors and supervisor for data collection and supervision were recruited and oriented on questions included in the questionnaire, in interviewing techniques, purpose of the study, and importance of privacy, discipline and approach to the interviewees and confidentiality of the

respondents. The filled questionnaires were checked for their completeness and accuracy by the researcher.

3.9 Validity and Reliability

Validity determines whether the research truly measures what it intends to measure, or how truthful the research results are (Schindler, 2003). In this study, the researcher used the services of an expert to test for content validity and Cronbach‘s Alpha to test for reliability. The more results prove consistent over time and reflect accurate representations of the total populations under study, the more scientifically reliable they are. If the results of a study will be reproduced under a similar methodology, then the research methods are considered to be reliable Schindler (2008). According to Tavakol *et al.* (2011), Cronbatch’s Alpha value ranging from 0.70 to 0.95 is acceptable. The research methodology was consistent across respondents to enable the researcher evaluate reliability based on the consistency of the results across the difference respondent classes within the population under study.

3.10 Data Analysis

Prior to data analysis, the questionnaires were checked for completeness; entries were also checked for consistency of data entry. The findings are presented in tables and analyzed through percentages, mean scores standard deviations. Descriptive statistics is used to analyze data. An SPSS program was used to support the data analysis for interpretation. These data measures assisted the study greatly to analyze the most influential determinants of the practice, challenges and performance of Humanitarian logistics Management in Plan International Ethiopia. Different indicators used in the questionnaires were assumed to have equal weights. The descriptive statistics is presented using frequency tables and cross tabulated results.

3.11 Research Ethics

During the study period the researcher maintained the highest standards of research ethics and good academic behavior to ensure that the study is credible. More specifically, honesty & integrity and expert-reviewer.

CHAPTER FOUR

RESULTS, DISCUSSION AND INTERPRETATION

This chapter presents the analysis of study findings on the practices, challenges and performance of humanitarian logistics management in plan international Ethiopia. The findings are analysed using the variables related to the research objective and presented basically in the form of frequency tables. Out of the 100 questionnaires distributed to respondents, 85 questionnaires representing 85 percent of the total questionnaires distributed were returned while 15 questionnaires representing 15 percent of the total questionnaires distributed to the respondents were not returned. However, responses from 5 respondents were discarded for they were not complete as they should be. Therefore, a total of 80 respondents that are working for and partnering with plan international Ethiopia were participated in this study resulting a response rate of 80 percent.

4.1 Results

4.1.1 Socio Demographic Characteristics of Respondents

Respondents were found to be aged from 25 to 54 years. As seen on the following table, more than quite a bit half of the respondents (68%) belong to the age group between 30 and 44 while there are few (4) who are aged 50 and above still working in the organization under study. The gender composition of the respondents showed that the majority, 56 (70%) are males and 24 (30%) are females. Most of the respondents, 47 (59%) have first degree while 27 (34%) of respondents hold master's degree and the remaining 6 (7%) have Diploma. According to the study, the respondents belong to different units at different levels in the organizational structure that are coordinated to provide the humanitarian logistics service in the affected area. The majority of the respondents, 25% are distribution workers while 10% are from the senior management category and around 13% of the respondents belong to the procurement and logistics team at different levels. The table below indicates the number and percentage distribution of the respondents to their respective units in plan

international Ethiopia. With regard to their years of experience in the organization, the majority, 32 (40%), served between 11 and 15 years. Moreover, 18 (22%) respondents have between 6-10 years of experience while there are 8 respondents with a 20 years and above experience.

Table 2: Demographic Characteristics of Respondents

Characteristics	Category	Frequency	Percentage
Age group	25-29 years	13	16
	30-34 years	14	18
	35-39 years	19	24
	40-44 years	21	26
	45-49 years	9	11
	50 and above	4	5
Gender	Male	56	70
	Female	24	30
Educational Level	Diploma	6	7
	First degree	47	59
	Master's Degree	27	34
	Other	0	0
Position in the organization	Senior Management officials	8	10
	Project manager	4	5
	Procurement and Logistics Manager	6	7
	Procurement and Logistics officers	5	6
	Warehouse Coordinators	4	5
	Transport Officers	4	5
	Finance Officers	3	4
	HR Officers	3	4
	Monitoring and Evaluation Officers	3	4
	Project Officers	6	7
	Distribution Coordinators	6	7
	Distribution Workers	20	25
	Stakeholders	9	11
Years of service in the organization	Less than 5 years	12	15
	6-10 years	18	22
	11-15 years	32	40
	16-20 years	10	13
	20+ years	8	10

4.1.2 Humanitarian Logistics Practices of Plan International Ethiopia

The descriptive statistics result of the SPSS analysis for the research findings revealed that the overall mean of the situation analysis practice in Plan International Ethiopia is 1.51 and a standard deviation of 0.22. The first parameter in the questionnaire was about the situation analysis in terms of volume and type of supplies needed resulted in a 1.45 mean and 0.50 standard deviation while the situation analysis in terms of how supplies will be delivered resulted in 1.19 mean result and standard deviation of 0.39. The other parameter related to situation analysis in terms of where to store the supplies temporarily resulted in a mean result of 1.63 and standard deviation of 0.49 while the other parameter related to the situation analysis in terms of security situation resulted in a mean result of 1.63 and standard deviation of 0.49. PIE assesses the extent of damage and possibility of reoccurrence of the disaster in advance of delivering supplies revealed with a mean result of 1.7 and standard deviation of 0.6 while the situation assessment in view of its urgency and PIE's service delivery based on the situation assessment revealed mean results of 1.51 and 1.45 respectively with similar standard deviations of 0.50.

For the other parameter for situation analysis, which is procurement, the mean result in terms of procurement policy PIE applies favors quick acquisition of supplies resulted in mean result of 2.01 and standard deviation of 0.82, PIE procurement department properly manages in kind donations of goods and required supplies resulted 1.68 for the mean and 0.47 for the standard deviation, Supplies that are required by PIE assessment team always match with supplies that are procured/donated resulted as 2.24 for the mean and 1.58 for the standard deviation, Procurement of supplies always match with the requested type and volume of supplies based on the information from the situation analysis team of PIE revealed as 1.60 for the mean and 1.23 for the standard deviation, there is no delay by the procurement in availing the required supplies had a mean result of 10.11 and 0.32 for the standard deviation while PIE has sufficient staff in the procurement department was found to have a mean of 1.45 and a standard deviation of 0.45. The procurement practice in general resulted in an overall mean of 1.68 and standard deviation of 0.69. The overall of mean of the transport practice revealed as 1.47 with standard deviation of 0.29 while for the warehouse management and distribution management the mean revealed as 1.94 and 1.74 while the standard deviation revealed 0.63 and 0.41 respectively.

Table 3: Humanitarian Logistics Practices

		SA	A	N	D	SD	Mean	Std Dev
Situation Analysis	PIE assesses the situation in the affected area during disasters in terms of the volume and type of supplies needed	44	36	0	0	0	1.45	0.50
	PIE assesses the situation in the affected area in terms of how the supplies will be delivered.	65	15	0	0	0	1.19	0.39
	PIE assesses the situation in the affected area in terms of where to store the supplies temporarily.	30	50	0	0	0	1.63	0.49
	PIE assesses the security situation of the affected area before deployment of logistics staff and supplies	30	50	0	0	0	1.63	0.49
	PIE assesses the extent of damage and the possibility of reoccurrence of the disaster in advance of delivering supplies.	30	44	6	0	0	1.70	0.60
	PIE assesses the situation in the affected area in view of its urgency.	39	41	0	0	0	1.51	0.50
	PIE provides service based on its situation assessment.	44	36	0	0	0	1.45	0.50
		Grand mean					**1.51**	**0.22**
Procurement	The procurement policy that PIE applies favors quick acquisition of supplies	26	27	27	0	0	2.01	0.82
	PIE procurement department properly manages in kind donations of goods and required supplies.	26	54	0	0	0	1.68	0.47
	Supplies that are required by PIE assessment team always match	26	27	9	18	0	2.24	1.58

	with supplies that are procured/donated.							
	Procurement of supplies always match with the requested type and volume of supplies based on the information from the situation analysis team of PIE	32	48	0	0	0	1.60	1.23
	There is no delay by the procurement in availing the required supplies.	71	9	0	0	0	1.11	0.32
	PIE has sufficient staff in the procurement department	44	36	0	0	0	1.45	0.50
						Grand mean	**1.68**	**0.69**
Transport	Plan International Ethiopia uses all modes of transportation available for the movements of supplies and people.	65	15	0	0	0	1.19	0.39
	Third party transport companies are cooperative to Plan International Ethiopia during emergencies to transport supplies and people to the affected area.	39	41	0	0	0	1.51	0.50
	Plan International Ethiopia delivers relief supplies to where they are required during emergencies.	62	18	0	0	0	1.23	0.42
	There are sufficient transport companies that provide transportation services for emergency works with Plan International Ethiopia.	26	27	9	18	0	2.24	1.12
	There is a prequalified list of transport companies for Plan International Ethiopia to choose from during emergencies.	65	15	0	0	0	1.19	0.39

	Plan International Ethiopia uses various transport optimization models to deliver supplies with the least cost possible.	44	36	0	0	0	1.45	0.50
		Grand mean					**1.47**	**0.29**
Warehouse Management	Plan International Ethiopia has sufficient and appropriate warehouse to temporarily store supplies during disasters.	0	53	0	9	18	2.90	1.30
	Plan International Ethiopia's warehouse location is very accessible for distribution.	26	27	27	0	0	2.01	0.82
	Plan International Ethiopia uses warehousing as a facilitator for coordination, sorting, and packaging activities for easier and efficient aid delivery to the beneficiaries.	44	36	0	0	0	1.45	0.50
	Plan International Ethiopia's warehouse is situated in a manner to improve material distribution operation.	47	33	0	0	0	1.41	0.50
		Grand mean					**1.94**	**0.63**
Distribution Management	Plan International Ethiopia's distribution centers are well established to ease distribution and minimize cost of operation.	26	27	9	18	0	2.24	1.14
	Plan International Ethiopia's distribution team has sufficient information as to whom the supplies should be delivered.	47	33	0	0	0	1.41	0.50
	Plan International Ethiopia's distribution team clearly understands the urgency of the situation.	47	15	18	0	0	1.64	0.83
	Plan International Ethiopia's distribution team is organized in such a way that on the spot situational decisions are encouraged	18	53	9	0	0	1.89	0.50

	to be made.							
	Plan International Ethiopia gives appropriate training to the distribution team to make sure that they execute their duties at higher level of passion and commitment.	39	41	0	0	0	1.51	0.50
						Grand mean	**1.74**	**0.41**

Source: Filed data, 2019

Note: SA= Strongly Agree, A= Agree, N= Neutral, D= Disagree, SD= Strongly Disagree, Std Dev= Standard Deviation

4.1.3 Humanitarian Logistics challenges in Plan International Ethiopia

The research results as computed by an SPSS application for the Humanitarian logistics challenges in Pan International Ethiopia, both for external and internal, revealed that the legal and political factors has a grand mean of 3.25 and standard deviation of 0.17. For this practice there are indicators like security situation doesn't allow PIE to operate freely in affected areas with a mean result of 3.63 and standard deviation of 0.49. Government law and regulation is so strict and challenges the logistics operation of PIE had a mean of 2.08 and standard deviation of 0.78 while for there is conflicting interest between PIE and the government had a mean of 4.55 and standard deviation of 0.50. The federal and state governments are not cooperative while executing the humanitarian logistics operations by PIE had a mean of 4.59 with standard deviation of 0.50 while PIE requires its staff to adhere to its professional code of conduct revealed a mean of 1.45 with standard deviation of 0.50. The other external factor is the technological factor where the findings showed a mean result of 3.25 and a standard deviation of 0.57. Challenges related to economic factor was found to have 2.38 as a grand mean and 0.38 as a grand standard deviation. The sociocultural challenge that PIE faces had a mean result of 3.52 and a standard deviation of 0.32.

From the internal factors, top management commitment is one and have been assessed through the following indicators. Plan

International Ethiopia's top management is not committed in supporting the logistics team, Plan International Ethiopia's structure is not organized in such a way that facilitates operation of the logistics department, and Plan International Ethiopia's experiences from previous operations of the humanitarian logistics are not researched and documented well resulted in a similar mean and standard deviation of 4.55 and 0.50 respectively while there is no learning and development scheme in Plan International to support the logistics staff revealed a mean of 4.32 and standard deviation of 0.47. The organizational structure of Plan International Ethiopia is not flexible in terms of decision making had a mean value of 4.32 and standard deviation of 0.47. The top management commitment aspect of the challenge revealed a grand mean of 3.55 and standard deviation of 0.44 while employee skill and motivation showed a grand mean result of 3.93 and standard deviation of 0.69. The internal challenge related to resource availability turned out a grand mean result of 3.53 and a standard deviation result of 0.64. The other challenge mentioned as an internal factor was coordination and information flow and was found with a grand mean of 3.29 and standard deviation of 0.24. Internal factor related to PIE's internal processes and procedures was revealed with a grand mean of 4.53 and a standard deviation of 0.43.

Table 4: Humanitarian Logistics Challenges

External Factors		SA	A	N	D	SD	Mean	Std Dev
Legal and political factors	The security situation doesn't allow Plan International Ethiopia to operate freely in the affected area.	0	0	30	50	0	3.63	0.49
	The government law and regulation is so strict and challenges the logistics operation of Plan International Ethiopia.	21	32	27	0	0	2.08	0.78
	There is conflicting interest between Plan	0	0	0	36	44	4.55	0.50

	International Ethiopia and the government.							
	The federal and state governments are not cooperative while executing the humanitarian logistics operations by Plan International Ethiopia.	0	0	0	33	47	4.59	0.50
	Plan International Ethiopia requires its staff to adhere to its professional code of conduct.	44	36	0	0	0	1.45	0.50
			Grand mean				**3.26**	**0.17**
Technological Factors	There is no adequate technological facility to expedite the information flow between the beneficiaries and staff of Plan International.	9	65	0	6	0	2.04	0.65
	It is hard for Plan International Ethiopia to coordinate and manage multiple players along with all the items that need to be delivered because of lack of appropriate technology.	0	0	0	36	44	4.55	0.50
	There is lack of telecommunication infrastructure to help the humanitarian logistics operations of Plan International Ethiopia.	18	9	0	47	6	3.18	1.38
			Grand mean				**3.25**	**0.57**
Economic Factors	The condition of the infrastructure in the affected area affects the humanitarian logistics	39	41	0	0	0	1.51	0.50

	operation of Plan International Ethiopia.							
	Water utilities are inadequate or instable in the affected area and hinders the humanitarian operations of plan International Ethiopia.	39	41	0	0	0	1.51	0.50
	There are no available local suppliers that can avail supplies to Plan International Ethiopia for its operations.	0	39	26	6	9	2.81	0.99
	Financial institutions are not available in the affected area and hinders financial transactions of Plan International Ethiopia.	9	0	0	71	0	3.66	0.95
			Grand mean				**2.38**	**0.38**
Sociocultural Factors	There are cultural and societal factors that hinder the distribution of supplies and operation of the humanitarian activities of Plan International Ethiopia.	21	50	0	9	0	1.96	0.85
	There are staff deployment problems related to community resistance in the emergency sites where Plan International Ethiopia operates.	0	0	0	62	18	4.23	0.42
	Plan International Ethiopia's distribution team doesn't get sufficient support from the local community.	0	0	0	50	30	4.38	0.49

			Grand mean				**3.52**	**0.32**
Internal Factors								
Top management commitment	Plan International Ethiopia's top management is not committed in supporting the logistics team.	0	0	0	36	44	4.55	0.50
	There is no learning and development scheme in Plan International to support the logistics staff.	0	0	0	54	26	4.33	0.47
	Plan International Ethiopia's structure is not organized in such a way that facilitates operation of the logistics department.	0	0	0	36	44	4.55	0.50
	Plan International Ethiopia's experiences from previous operations of the humanitarian logistics are not researched and documented well.	0	0	0	36	44	0.00	0.50
	The organizational structure of Plan International Ethiopia is not flexible in terms of decision making.	0	0	0	54	26	4.33	0.47
			Grand mean				**3.55**	**0.44**
Employee skill and motivation	There is no sufficient skilled man power in the logistics department of Plan International Ethiopia.	0	0	0	36	44	4.55	0.50
	There is high level of staff turnover in the	0	0	0	53	27	4.34	0.48

	logistics department of Plan International Ethiopia.							
	There is experience sharing through group brainstorming sessions & regular logistics workshops for Plan International Ethiopia's staff motivation.	16	13	33	0	18	2.89	1.50
					Grand mean		**3.93**	**0.69**
Resource Availability	Plan International Ethiopia doesn't have sufficient budget for the logistics team.	0	0	0	80	0	4.00	0.00
	Flexibility of type and volume of demand is not properly absorbed by Plan International Ethiopia.	0	0	26	36	18	3.90	0.74
	Plan International Ethiopia is using information technology as a tool for helping in its decision making.	0	62	0	0	18	2.68	1.26
					Grand mean		**3.53**	**0.64**
Coordination & Information Flow	Quality and speed of information flow in Plan International Ethiopia is not up to the standard.	18	0	0	32	30	3.70	1.53
	Ability to disseminate accurate and timely information is not satisfactory in Plan International Ethiopia.	0	0	26	45	9	3.79	0.63

	Use of automated systems or mechanisms to increase logistics efficiency is not in place in Plan International Ethiopia.	18	56	6	0	0	1.85	0.53
	Plan International Ethiopia doesn't have access to necessary logistics information from data base of other organizations.	0	0	0	36	44	4.55	0.50
	Plan International Ethiopia hasn't invested in assistive technologies that support the flow of information in its operations and during disasters.	0	53	9	18	0	2.56	0.84
			Grand mean				**3.29**	**0.24**
Internal process & Procedures	Internal processes of Plan International Ethiopia in general are so slow.	0	0	0	36	44	4.55	0.50
	Plan International Ethiopia's Human resource recruitment process restricts hiring staff from the local community.	0	0	0	30	50	4.63	0.49
	Internal processes of Plan International Ethiopia in general are so slow.	0	0	0	48	32	4.40	0.49
			Grand mean				**4.53**	**0.43**

Source: Filed data, 2019

Note: SA= Strongly Agree, A= Agree, N= Neutral, D= Disagree, SD= Strongly Disagree, Std Dev= Standard Deviation

4.1.4 Humanitarian Logistics Performances of Plan International Ethiopia

Five indicators were used to assess the humanitarian logistics performance of an International Ethiopia. Based on the data collected and analyzed, the first indicator, which is reliability resulted in a grand mean result of 3.68 and standard deviation of 036 while the second parameter, which is flexibility resulted in a grand mean of 3.99 and standard deviation of 0.34. Another performance indicator was cost and had a grand mean of 2.06 with standard deviation of 0.28. As seen in the table in the table below the grand mean for responsiveness was 1.90 while its standard deviation was 0.46. The fifth indicator was asset management with a grand mean result of 3.26 while its standard deviation was 0.13.

Table 5: Humanitarian Logistics Performance

		SA	A	N	D	SD	Mean	Std Dev
Reliability	The right supplies are delivered by Plan International Ethiopia in the right quantity with all the necessary documentation for a demand requested.	0	27	26	9	18	3.23	0.3
	Plan International Ethiopia fulfils all requested demands.	0			54	26	4.33	0.47
	All the supplies are delivered at the right time in order that beneficiaries are properly aided by Plan International Ethiopia.	0	32	21	9	18	3.16	1.18
	The supplies delivered by Plan International Ethiopia are in a damage-free state with the correct configuration and hence no return or replacement is required.	0	18	15	47	0	3.36	0.83

	There are no complaints reported during the execution of the logistics operation of Plan International Ethiopia.	0	0	0	53	27	4.34	0.48
						Grand mean	**3.68**	**0.36**
Flexibility	The type of supplies required may change from the initial request during assessment and still can be absorbed by Plan International without any problem	0	0	0	71	9	4.11	0.32
	Plan International is flexible in a way it addresses unplanned demand requests.	0	0		71	9	4.11	0.32
	Plan International is flexible in a way it addresses unplanned demand requests.	0	0	26	45	9	3.79	0.63
	Plan International accommodates in any change in terms of types of relief logistics supplies	0	0	21	41	18	3.96	0.70
						Grand mean	**3.99**	**0.34**
Cost	Plan International is good at managing all the costs that arise from all its activities in supplying and distributing material to where needed.	9	71	0	0	0	1.89	0.32
	There are systems designed by Plan International Ethiopia to make sure that the optimum cost is incurred.	9	71	0	0	0	1.89	0.32
	Plan International recognizes cost management and optimization as important issues in its operations	30	50	0	0	0	1.63	0.49
	Distribution of supplies by Plan International Ethiopia is	27	32	21	0	0	1.93	0.78

	made with optimum cost.							
	Costs related to wrong supplies and quantities doesn't exist in Plan International Ethiopia.	26	54	0	0	0	1.68	0.47
	Costs related to damaged supplies doesn't exist in Plan International Ethiopia.		18	9	53	0	3.44	0.84
	Plan International applies cost cutting measures to reduce total cost in its operations	9	65	6	0	0	1.96	0.43
					Grand mean		**2.06**	**0.28**
Responsiveness	There is an integrated relationship with suppliers and third party service providers to ensure that Plan International is responsive to requests.	50	30	0	0	0	1.38	0.49
	All requested demands are delivered at the right time	18	9	0	53	0	3.10	1.30
	Decisions at all levels to expedite the logistics operations in Plan International Ethiopia are made instantaneously.	44	36	0	0	0	1.45	0.50
	Due attention is given by Plan International Ethiopia and there is proper follow-up of speeds of responding to the requests at any level.	26	54	0	0	0	1.68	0.47
					Grand mean		**1.90**	**0.46**
Asset Management	The supplies are stored in Plan International Ethiopia's warehouse at the right quantity at any time.	0	0	30	50	0	3.63	0.49
	It takes very short time for Plan International Ethiopia to	18	56	6	0	0	1.85	0.53

	avail supplies and deliver them to the beneficiaries.							
	Plan International Ethiopia's cost of carrying supplies in the warehouse is very small.	0	0	0	15	65	4.81	0.39
	Most packaging/shipping materials used by Plan International Ethiopia are reusable.	0	0	0	36	44	4.55	0.50
	There is no excess inventory in Plan International Ethiopia.	44	36	0	0	0	1.45	0.50
						Grand mean	**3.26**	**0.13**

4.2 Discussion and Interpretation

4.2.1 Humanitarian Logistics Practices

There were five identified practices of humanitarian logistics studied in Plan International Ethiopia. The first one was situation analysis. Before providing any humanitarian aid assessing the situation very well is vital so as to make the effort succeed. As seen from the results above, the grand mean for this indicator was revealed as 1.51. This implies that most of the respondents agreed while some strongly that the organization assesses situations well before providing any humanitarian assistance to the affected area in terms of urgency, arranging temporary storage of supplies, identifying volume and variety of supplies. The procurement function is practiced in such a way that it ensures quick acquisition of supplies and donations of goods as and when needed. The grand mean for procurement practice indicators was found to be 1.68 which revealed most of the respondents perceived that procurement is practiced fairly well. The other practice identified was transportation where respondents perceived to be practiced fairly well like procurement practice. The grand mean for transportation was found to be 1.47. With 1.94 grand mean value warehouse management on the other hand was perceived to be practiced very well next to situation analysis. The last identified indicator of the logistics practices was distribution management where respondents perceived it is practiced well. The grand mean result for distribution management was 1.74. In general, among the logistic practices, transport and situation analysis were perceived to be performed better compared to the other practice indicators.

4.2.2 Humanitarian Logistics Challenges

According to the analysis both the external and internal challenges are perceived differently by different groups of respondents. However, the economic factor with a grand mean of 2.38 is found to be perceived the most serious challenge followed by technological factor with a grand mean of 3.25. The legal and political factor with a grand mean of 3.26 and the sociocultural factor with a grand mean of 3.52 are perceived to be the third and fourth serious challenges perceived by the respondents.

The internal factors on the other hand were perceived by the respondents with the first rank goes to coordination and information flow, resource availability as a second most serious

internal challenge, employee skill and motivation the third serious, top management commitment at the fourth rank and lastly the internal process and procedures with respective grand means of 3.29, 3.53, 3.75, 4.46 and 4.53. These figures imply that resources are not adequately available for the emergency activities. Table 8 below shows how the respondents perceived to what extent the organization is facing the external and internal challenges.

Table 6: Mean Evaluation of Humanitarian Logistics Challenges

		Indicator	Mean	Std. Deviation	N
Humanitarian Logistics Challenges	External challenges	Legal and political Factors	3.26	0.17	80
		Technological Factors	3.25	0.57	80
		Economic Factors	2.38	0.38	80
		Sociocultural Factors	3.52	0.32	80
	Internal challenges	Top Management Commitment	3.55	0.44	80
		Employee skill and Motivation	3.93	0.69	80
		Resource Availability	3.53	0.64	80
		Coordination and Information flow	3.29	0.24	80
		Internal Processes and Procedures	4.53	0.43	80

In general, the overall evaluation of the importance of the different indicators of internal factors indicates that respondents perceived lower importance given the value of the index on average is above 4.

4.2.3 Humanitarian Logistics Performances

The humanitarian logistics performance was assessed using five indicators namely reliability, flexibility, cost, responsiveness and asset management. Based on the analyzed data responsiveness was found to be ranked first with a mean result of 1.90 followed by cost with a mean result of 2.06. Asset management was ranked third while reliability and flexibility

were ranked fourth and fifth in the row with grand means of 3.68 and 3.99 respectively. The grand mean for flexibility is pretty much closer to 4.0 which tells that respondents disagree to favor the indicator. The grand mean for reliability also shows a result closer to disagreement, 4.0 and hence respondents perceive that the services provided by the organization are not reliable. The following table shows the mean scores of the indicators for humanitarian logistics performance.

Table 7: Mean Evaluation of Performance of Humanitarian Logistics

	Indicator	Mean	Std. Deviation	N
Humanitarian Logistics Performances	Reliability	3.68	0.36	80
	Flexibility	3.99	0.34	80
	Cost	2.06	0.28	80
	Responsiveness	1.90	0.46	80
	Asset Management	3.26	0.13	80

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of the findings of humanitarian logistics practices, challenges and performance of Plan International Ethiopia. The aim of the study was to evaluate the practices, challenges and performances of Humanitarian logistics management of Plan International Ethiopia. The chapter also presents the conclusions made from the findings and the recommendations of the researcher based on the findings as well as suggestions for further research.

5.1 Summary of Findings

The major findings of the study revealed that there are various humanitarian logistics practices that are practiced in PIE. Conducting good situational analysis of security, urgency and extent of damage in affected areas before deployment of supplies is mandatory practice and found to be well performing. The humanitarian logistics operation were also found to have effective and efficient internal operations which enables them to better manage their logistics. However, the external factors were perceived to be still a challenge compared to internal factors. Overall performance of the humanitarian logistics of the organization were evaluated to be lower especially in terms of factors related with reliability and flexibility given the perceived performance index value greater than 3.

5.2 Conclusion

The findings of the study confirmed that the humanitarian logistics practices of plan international Ethiopia in terms of addressing the required supplies needed, the strategies used to deliver supplies to affected areas, in accessing store for supplies, assessing the situation of the security, its urgency and the extent of damage in the affected area before deployment of logistics staff and supplies were organized. Procurement policy of plan international Ethiopia practices quick acquisition of supplies though still needs improvement, procurement staffs had experiences in managing goods and required supplies, in most cases the practices in the area of supplies required were matched with supplies that are procured/donated and the

existing experience and practices helps the humanitarian logistics team at plan international Ethiopia to avail the required supplies timely. In relation to transport management the study also found that PIE uses different modes of transportation in case of emergencies in order to mobilize supplies and people, third party transport companies were cooperative during emergencies and the deliverance of relief supplies to where they are required during emergencies were appropriate. PIE has prequalified list of transport companies to choose and used various transport optimization models to deliver supplies with the least cost. The study also found out that PIE availed and made accessible sufficient and appropriate warehouse to temporarily store supplies, the location of warehouses were accessible for distribution, facilitation for coordination, sorting, and packaging activities for easier and efficient aid delivery. The finding of the study also revealed that the distribution centers used by PIE were well established to ease distribution and minimize cost of operation.

The findings of the study revealed that different challenges, both external and internal, were faced by PIE while executing humanitarian logistics practices. The respondents believe that external challenges relatively affecting the organization more than the internal challenges. Among the external challenges themselves resource availability is affecting the organization's performances. It looks like the organization lacks internal coordination based on the revealed result.

The performances of Plan International Ethiopia overall were also found to be moderately satisfactory. However, there are still problems related to different parameters of the performance measures. By looking at the performance measurement indicators it is possible to deduce that PIE is more responsive towards humanitarian activities. Reliability in terms of the right type of supplies delivered for on the other hand was turned out with only 33% that agreed on the right type of supplies were supplied. Flexibility was also found to be less performed by the organization whenever there are flexible demands. In terms of cost management and responsiveness, the organization is perceived to be well performing as most responses from the respondents favored it. The other parameter of performance measures, asset management, was revealed to have some defects in terms of storage cost specifically.

5.3 Recommendations

Even though the findings of the research in general revealed that Plan International Ethiopia is operating well in this specific area during emergencies, there are still concerns that need to be taken into account and addressed for a better performance especially in relation to factors related to reliability and flexibility. The organization performs situation analysis before deployment of supplies and staff to the affected area but not to the level it should be. The situation should be assessed not only for the existing stage but also for the upcoming stages in case the disaster may reoccur in a short while. The assessment team should be the first point of contact to provide information to the procurement team so as to get a matched supply of items between the predicted and the actual items in terms of volume and variety change. It is also good to include staff from the procurement team to be part of the assessment team. At times there are shortages of transport companies willing and capable of providing the service it is also good to discuss with the local and federal government and even with the local community to get support for the shortages. The local community may also help by using traditional transportation means for areas that are not easily accessible by modern means of transportation. Plan International Ethiopia should consider having very accessible warehouses to facilitate delivery of supplies to the affected people on time. This can be achieved by constructing simple temporary warehouses or sometimes renting such a facility from the local community. Whenever appropriate, the “just in time” approach can also be applied.

Plan International Ethiopia should partner with other similar organizations so that they can request support from the local and federal government so as to provide their service to the affected community well. Request through associations have power to influence the government provide the necessary support for the organizations.

Documentation of previous practices is very important to learn lessons and hence PIE should document its performances very well. It is also good for the organization to conduct such researches by in house crew, especially by the monitoring and evaluation team, to evaluate their performances progressively. The other significant problem related to the organization’s performance is its flexibility to absorb volume and variety changes. There should always be a contingency plan to absorb such fluctuations even though the situations are usually unplanned which demand urgent humanitarian responses.

5.4 Future Research Recommendation

This research was conducted in a single humanitarian organization where the scope is very limited. Accordingly, it is advised for future researchers include similar organizations while perusing researches in similar areas of interest to get a better view of the practices, challenges and performances of humanitarian logistics. Moreover, future researchers can consider to see interdependencies among the variables mentioned.

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Annex

Questionnaire

Dear Respondent,

Subject: Request to respond to the study questionnaire

I am a student at Addis Ababa University and pursuing a degree of Masters of Arts in Logistics and Supply Chain Management. As part of this course requirement, I am expected to carry out a research on the practices, challenges and performance of Humanitarian logistics of Plan International Ethiopia.

I therefore, humbly request your assistance and cooperation in responding to the questions attached herewith. The information given will be treated with utmost confidentiality and will be used only for the purpose of this study.

Looking forward for your response and cooperation.

Respectfully,

Wolde Wodaje

Part A: General Information of the Organization/Project

a. Name of Organization/Project:_____

b. Region/City you are currently based:_____

c. Major Programs/Services provided by your organization:_____

_____

_____

d. Estimated number of beneficiaries in emergency program:_____

e. Total number of staffs (logistics/Supply chain, procurement):_____

Part B: Socio- Demographic Characteristics of Respondents

Kindly indicate which characteristic best describes your demography by putting a tick mark (√) on the space provided.

1. Age range: 1) 25-29_____ 2) 30-34 _____ 3) 35-39_____ 4) 40 – 44_____ 5) 45 – 49_____ 5) Above 50_____

2. Gender: 1) Male_____ 2) Female_____

3. Education level: 1) Diploma_____ 2) First Degree_____ 3) Master's Degree_____ 4) Other, Specify_____

4. Current position in the organization/project: 1) Senior Management Staff_____ 2) Project Manager/Coordinator_____ 3) Project officer_____ 4) Finance Officer_____ 5) Other, Specify_____

5. Years of experience in the organization: 1) Less than 5 years_____ 2) 6 – 10 years_____ 3) 11 – 15 years_____ 4) 16-20 years _____ 5) More than 20 years_____

Below are questions related to the humanitarian logistics practices, challenges and performances of Plan International Ethiopia. Kindly indicate your level of agreement to the

items by putting a tick mark (√) in the boxes provided. A scale of 1-5 is used to respond to the questions where;

1. Strongly Agree 2. Agree 3. Neutral 4. Disagree
5. Strongly disagree

C. Humanitarian Logistics Practices of Plan International Ethiopia

Variables	Item	Scale				
		1	**2**	**3**	**4**	**5**
1. **Situation Analysis**	Plan International Ethiopia assesses the situation in the affected area during disasters in terms of the volume and type of supplies needed.					
	Plan International Ethiopia assesses the situation in the affected area in terms of how the supplies will be delivered.					
	Plan International Ethiopia assesses the situation in the affected area in terms of where to store the supplies temporarily.					
	Plan International Ethiopia assesses the security situation of the affected area before deployment of logistics staff and supplies.					
	Plan International Ethiopia assesses the extent of damage and the possibility of reoccurrence of the disaster in advance of delivering supplies.					
	Plan International Ethiopia assesses the situation in the affected area in view of its urgency.					
	Plan International Ethiopia provides					

	service based on its situation assessment.					
2. **Procurement**	The procurement policy that Plan International applies favors quick acquisition of supplies					
	Plan International Ethiopia's procurement department properly manages in kind donations of goods and procurement of required supplies.					
	Supplies that are required by Plan International Ethiopia's assessment team always match with supplies that are procured and/donated.					
	Procurement of supplies always match with the requested type and volume of supplies based on the information from the situation analysis team of Plan International Ethiopia.					
	There is no delay by the procurement team of Plan International Ethiopia in availing the required supplies.					
	Plan International Ethiopia has sufficient staff in the procurement department					
3. **Transport**	Plan International Ethiopia uses all modes of transportation available for the movements of supplies and people					
	Third party transport companies are cooperative to Plan International Ethiopia during emergencies to transport supplies and people to the affected area					
	Plan International Ethiopia delivers relief supplies to where they are required during					

	emergencies					
	There are sufficient transport companies that provide transportation services for emergency works with Plan International Ethiopia.					
	There is a prequalified list of transport companies for Plan International Ethiopia to choose from during emergencies.					
	Plan International Ethiopia uses various transport optimization models to deliver supplies with the least cost possible.					
4. **Warehouse Management**	Plan International Ethiopia has sufficient and appropriate warehouse to temporarily store supplies during disasters.					
	Plan International Ethiopia's warehouse location is very accessible for distribution.					
	Plan International Ethiopia uses warehousing as a facilitator for coordination, sorting, and packaging activities for easier and efficient aid delivery to the beneficiaries.					
	Plan International Ethiopia's warehouse is situated in a manner to improve material distribution operation.					
5. **Distribution Management**	Plan International Ethiopia's distribution centers are well established to ease distribution and minimize cost of operation.					
	Plan International Ethiopia's distribution team has sufficient information as to whom the supplies should be delivered.					

	Plan International Ethiopia's distribution team clearly understands the urgency of the situation.					
	Plan International Ethiopia's distribution team is organized in such a way that on the spot situational decisions are encouraged to be made.					
	Plan International Ethiopia gives appropriate training to the distribution team to make sure that they execute their duties at higher level of passion and commitment.					

D. Humanitarian Logistics Challenges of Plan International Ethiopia

Variables	Item	Scale				
		1	**2**	**3**	**4**	**5**
1. External Factors						
Legal and Political Factors						
	The security situation doesn't allow Plan International Ethiopia to operate freely in the affected area.					
	The government law and regulation is so strict and challenges the logistics operation of Plan International Ethiopia.					
	There is conflicting interest between Plan International Ethiopia and the government.					
	The federal and state governments are not cooperative while executing the humanitarian logistics operations by Plan International Ethiopia.					
	Plan International Ethiopia requires its staff					

	to adhere to its professional code of conduct.					
Technological Factors						
	There is no adequate technological facility to expedite the information flow between the beneficiaries and staff of Plan International.					
	It is hard for Plan International Ethiopia to coordinate and manage multiple players along with all the items that need to be delivered because of lack of appropriate technology.					
	There is lack of telecommunication infrastructure to help the humanitarian logistics operations of Plan International Ethiopia.					
Economic Factors						
	The condition of the infrastructure in the affected area affects the humanitarian logistics operation of Plan International Ethiopia.					
	Water utilities are inadequate or instable in the affected area and hinders the humanitarian operations of plan International Ethiopia					
	There are no available local suppliers that can avail supplies to Plan International Ethiopia for its operations.					
	Financial institutions are not available in the affected area and hinders financial					

	transactions of Plan International Ethiopia.					
Sociocultural Factors						
	There are cultural and societal factors that hinder the distribution of supplies and operation of the humanitarian activities of Plan International Ethiopia					
	There are staff deployment problems related to community resistance in the emergency sites where Plan International Ethiopia operates.					
	Plan International Ethiopia's distribution team doesn't get sufficient support from the local community					
2. Internal Factors						
Top Management Commitment	Plan International Ethiopia's top management is not committed in supporting the logistics team.					
	There is no learning and development scheme in Plan International to support the logistics staff.					
	Plan International Ethiopia's structure is not organized in such a way that facilitates operation of the logistics department.					
	Plan International Ethiopia's experiences from previous operations of the humanitarian logistics are not researched and documented well.					
	The organizational structure of Plan International Ethiopia is not flexible in terms of decision making.					

Employee Skill and Motivation	There is no sufficient skilled man power in the logistics department of Plan International Ethiopia.					
	There is high level of staff turnover in the logistics department of Plan International Ethiopia.					
	There is experience sharing through group brainstorming sessions & regular logistics workshops for Plan International Ethiopia's staff motivation.					
Resource Availability	Plan International Ethiopia doesn't have sufficient budget for the logistics team.					
	Flexibility of type and volume of demand is not properly absorbed by Plan International Ethiopia.					
	Plan International Ethiopia is using information technology as a tool for helping in its decision making.					
Coordination and Information Flow	Quality and speed of information flow in Plan International Ethiopia is not up to the standard.					
	Ability to disseminate accurate and timely information is not satisfactory in Plan International Ethiopia.					
	Use of automated systems or mechanisms to increase logistics efficiency is not in place in Plan International Ethiopia.					
	Plan International Ethiopia doesn't have access to necessary logistics information from data base of other organizations					
	Plan International Ethiopia hasn't invested					

	in assistive technologies that support the flow of information in its operations and during disasters					
Internal Processes and procedures	Internal processes of Plan International Ethiopia in general are so slow.					
	Plan International Ethiopia's Human resource recruitment process restricts hiring staff from the local community.					
	Internal processes of Plan International Ethiopia in general are so slow.					

E. Humanitarian Logistics Performance of Plan International

Variables	**Item**	**Scale**				
		1	**2**	**3**	**4**	**5**
1. **Reliability**	The right supplies are delivered by Plan International Ethiopia in the right quantity with all the necessary documentation for a demand requested.					
	Plan International Ethiopia fulfils all the requested demands.					
	All the supplies are delivered at the right time in order that beneficiaries are properly aided by Plan International Ethiopia.					
	The supplies delivered by Plan International Ethiopia are in a damage-free state with the correct configuration and hence no return or replacement is required.					
	There are no complaints reported during the					

	execution of the logistics operation of Plan International Ethiopia.					
2. **Flexibility**	The type of supplies required may change from the initial request during assessment and still can be absorbed by Plan International without any problem.					
	The volume of supplies required may change from the initial request during assessment and still can be absorbed by Plan International without any problem.					
	Plan International is flexible in a way it addresses unplanned demand requests.					
	Plan International accommodates in any change in terms of types of relief logistics supplies.					
3. **Cost**	Plan International is good at managing all the costs that arise from all its activities in supplying and distributing material to where needed.					
	There are systems designed by Plan International Ethiopia to make sure that the optimum cost is incurred.					
	Plan International recognizes cost management and optimization as important issues in its operations.					
	Distribution of supplies by Plan International Ethiopia is made with optimum cost.					
	Costs related to wrong supplies and quantities doesn't exist in Plan International Ethiopia.					
	Costs related to damaged supplies doesn't exist in Plan International Ethiopia.					
	Plan International applies cost cutting measures					

	to reduce total cost in its operations					
4. **Responsiveness**	There is an integrated relationship with suppliers and third party service providers to ensure that Plan International is responsive to requests.					
	All requested demands are delivered at the right time					
	Decisions at all levels to expedite the logistics operations in Plan International Ethiopia are made instantaneously.					
	Due attention is given by Plan International Ethiopia and there is proper follow-up of speeds of responding to the requests at any level.					
5. **Asset Management**	The supplies are stored in Plan International Ethiopia's warehouse at the right quantity at any time.					
	It takes very short time for Plan International Ethiopia to avail supplies and deliver them to the beneficiaries.					
	Plan International Ethiopia's cost of carrying supplies in the warehouse is very small.					
	Most packaging/shipping materials used by Plan International Ethiopia are reusable.					
	There is no excess inventory in Plan International					