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Contingency Preparedness Issues towards Humanitarian Logistics in Ghana

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Abstract

This study examined contingency preparedness towards humanitarian logistics in Ghana. The study was conducted through a descriptive survey research design. Structured questionnaire coupled with simple random sampling technique was used to select 50 officers from various departments and structures of Disaster Management and Relief Organizations in Ghana. The collected data was analysed using the Statistical Package for Social Sciences version 20. Statistical tools such as percentages (%), frequencies, means, median and standard deviation were employed during analysis. Tables and figures were used to display results obtained. Both expressive and inferential statistics were employed. The study revealed that disaster management and relief organizations (DMROs) have humanitarian logistics plan which guides its humanitarian endeavours, however, the plan was found not to be comprehensive enough to coordinate the movement of relief products and resources to disaster victims in a timely, safely, effective and efficient manner. The study also divulged that DMROs in Ghana adopt a proactive approach towards its contingency planning and humanitarian logistics preparedness. Further, the study revealed 10 critical challenges that hamper the operations of humanitarian logistics in Ghana. While DMROs in Ghana give priority to these 10 Challenges in their operations, the study also suggests that DMROs review their logistics plan to cater for accurate demand analysis, coordination essentials, information needs and capitalization on past lessons learnt. DMROs must train their personnel as well as collaborate and consummate both local and external capacities available. This will contribute significantly to solving the problem of personnel deficiency and resources needed to facilitate logistics preparedness towards humanitarian disaster relief.

Keywords: Humanitarian Logistics / Procurement System / Development Economics / Humanitarian Disaster Relief

1.0 INTRODUCTION

A large percentage of world population has suffered from both natural and man-made disaster. The 2004 Boxing Day Tsunami in the Indian Ocean, the 2005 earthquake in Pakistan, innumerable hurricanes in the United States, conflict in Sudan, and the spread of HIV/AIDS in Africa and other parts of the world are just a handful. Humanitarian responses to these disasters were largely neither effective nor efficient due to logistical deficiencies. Logistics applied to disasters has received increasing interest from both researchers and practitioners since the Indian Ocean tsunami in 2004 (Kovács and Spens, 2007). In statistic, the tsunami provided indication that the effectiveness of an emergency aid response hinges on logistic rapidity and efficiency (Pettit et al. 2011), by this means amassing awareness of crucial role logistics play in humanitarian relief operations (Christopher and Tatham, 2011).

According to Thomas and Kopczak, (2005), humanitarian logistics (HL) is the activities of efficiently and cost-effectively planning, implementing, controlling and monitoring the movement of materials, people, skills and knowledge and monetary resources along the humanitarian supply chain with the goal of relieving suffering of disaster victims. Specifically, humanitarian logistics is a combination of preparedness and response (Tomasini and Van Wassenhove, 2009).

While the preparedness phase is characterized by continuous process over a long term, the response phase is a fast supply process with high level of urgency because the lead time for materials may jeopardize the rescue operation (Kessler, 2013). Logistics accounts for an estimated 80% in any disaster relief effort making it the zenith of all costs in any disaster relief operation. This makes logistics the most crucial element in any disaster relief effort and a function capable of drawing a difference between a successful and an unsuccessful operation.

In Ghana, there are several disaster management and relief organizations (DMROs) including NADMO whose operation was established by an act of parliament. Due to the complexity of their

environment, these organizations cannot anticipate all disruptions hence the need to take a comprehensive and proactive approach to uncertainties in order to be prepared to manage multiple and unexpected events (Mitroff and Alpaslan, 2003). To do so, organizations typically choose a strategy that builds in redundancy along the supply chain (e.g. in terms of inventory or other operational capacity), or one that is designed to increase agility by developing their adaptive capacity at the organizational level (Chopra and Sodhi, 2004; Sheffi and Rice, 2005; Tang, 2006).

Disaster management and relief organization in Ghana are often short of funding for their emergency preparations as most of their emergency funding only arrives after the disaster has struck. This constrains their capacity to hold enough supplies "just in case (JIC)" and also affects their investment in human resource. Sequences of destructive disaster have occurred in Ghana over the past decade with the twin-disaster (June 3rd and 4th of 2015) in Accra being the noxious in terms of human fatalities, and destruction of commercial properties and homes. Given poor nature of our inner-city planning, improper of drainage system, climate factors and interruption of waterways, it is expected that more disasters are yet to come.

Therefore, readiness processes are crucial- comprising of the right relief articles (food, hygiene products, bed and so on), pre-positioning of these articles, transportation, human resource, financial resource and the right collaboration to aid the recovery process. Are DMROs in Ghana ready? The motivation for conducting this study is that, most of the existing literature on emergency preparedness focuses on supply pre-positioning; worth noting is the indication that other planning related issues like funding, personnel management and coordination are rarely discoursed. Indeed, there are relatively few studies which cover these aspects of emergency preparation in humanitarian logistics in the Ghana context.

To help fill this gap, this research examines the contingency preparedness towards humanitarian logistics in Ghana from the ground up and, in doing so, hopes to offer a better understanding of the essence of humanitarian logistics plan, the extent of preparedness and recovery as well as the bottlenecks to effective humanitarian logistics in Ghana.

2.0 LITERATURE REVIEW

2.1 Contingency Preparedness of Humanitarian Logistics

The logistic challenges associated with the humanitarian supply chain keeps increasing in recent times to the extent that not even a robust financial gridlock could influence the reduction of logistics challenges among humanitarian supply chains (Oloruntoba & Grey, 2006). The activity of effectively managing disaster is closely associated with speed. This means that disaster management can be judged as effective or efficient based on the speed with which the disaster is responded to. According to Davidson (2006) disaster response is no longer a matter of financial backup but closely associated with the organization and the greatest organizational benefits rest in being prepared for any unforeseen disaster (Van Wassenhove, 2005).

Disasters are capricious and its whimsical nature is dependent on certain factor such as the type of disaster, the origin of the disaster, the geographical location of the disaster and the callousness (severity) of the disaster. More and more disasters are always expected to occur in the future due to their unpredictable nature (Helmer & Van Aalst, 2003). This implies that the only action that can be taken to not to avert the situation but to reduce its impact on affected victims, nation and the economy as a whole is be wide-awake in preparedness for its occurrence, hence contingency preparedness for disaster.

Contingency preparedness (CP) (also known as emergency preparedness) is a significant activity for organizations and communities to prepare themselves to react properly to an adversity incident and its probable effects. The objective of CP according to UNHCR (2015a) is to heighten the velocity and capacity of humanitarian backing and to safeguard that the premeditated path and necessary elementary units for an ensuing response are in place. Numerous studies have categorized the activity of disaster management into four (4) main facets as coined by Dynes (1982). [See fig 1]. These include; mitigation stage which primarily focuses on averting and thwarting the disaster from occurring. The second phase is the preparedness phase which focuses on alleviating or easing the disaster on victims when it occurs. The third phase of the disaster is the response phase which focuses on reacting by way of providing aid when the disaster event has already occurred and the final stage is the rehabilitation phase which emphasize

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on reinstating the damage which has been caused by the incidence of the disaster event.

F*ig. 1 Facets of Disaster Management*

We find ourselves in an environment where the agency responsible for managing disasters have been so reactive that the mitigation stage of disaster management is overlooked and seems to be non-existent making the environment prone to disaster at any given point in time. Even the preparedness stage is even more problematic as organizations seem to be handicapped with a lot factors one of which is logistics and the other organizational culture. Given the motivation behind the study, focus will be on the second phase of disaster management (preparedness phase).

2.2 Conceptual Framework

A conceptual framework signifies the researcher's amalgamation of literature on how to describe a phenomenon (McGaghie *et al.* 2001). It sets forth actions to be undertaken in a study mostly by using charts or graphs considering a researcher's prior knowledge of past study which is acquired by reviewing literatures from quality academic peer reviewed journals. Different frameworks can be used to guide the emergency preparedness of humanitarian logistics operations. The framework adopted below is based on a progressive methodology.

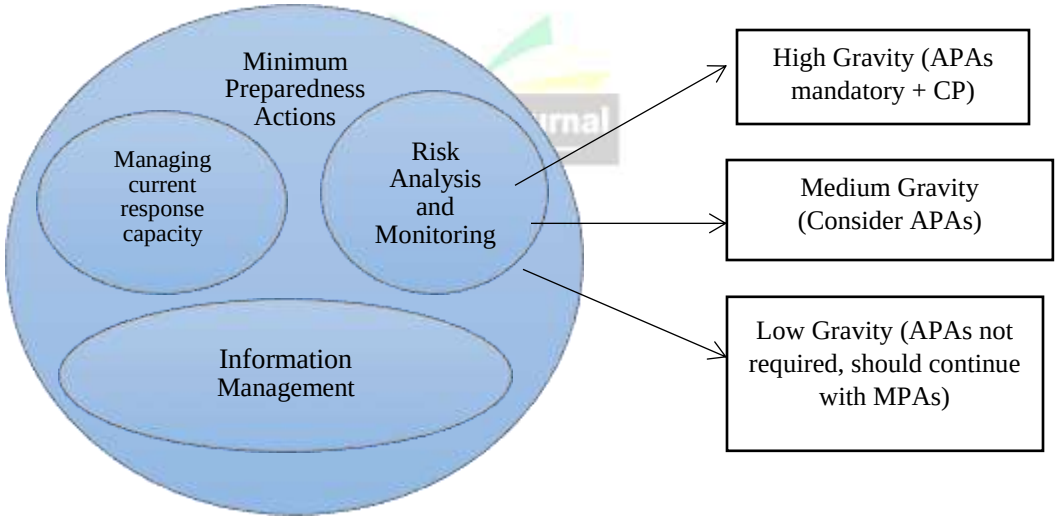

Fig 2 Conceptual Framework for contingency Preparedness

2.3 Minimum Preparedness Actions (MPA)

According to Kovács & Spens (2007) the goal of a country's humanitarian firm or any other body who is dedicated to rendering humanitarian services to disaster victims is to implement uninterruptedly least possible preparedness actions with the objective of maintaining a slightest level of disaster readiness notwithstanding whether or not any risk event has been detected. Embarking on minimum preparedness action is less costly and does not involve huge capital commitment. Narasimhan et al (2006) argue that the implementation of Minimum Preparedness Action in any humanitarian setting is pivotal to achieving agile response to emergency situations. This is not different from Kovács & Spens (2007) who adduced that timely response to the needs of disaster victims have a strong positive correlation with the welfare of the victims affected by the disaster. Nisha de Silva (2001) adds that several activities ought to be considered during the Minimum Preparedness Action some of which include: risk assessment and

management, information management, management of the existing response capacities, planning of the working capability to provide critical aid and defense, directives and management schedules.

2.4 Risk Analysis and Monitoring

Risk management is a significant piece of the minimum preparedness actions (Maon et al 2009). According to Kovács & Spens (2007) risk management is the calculation and estimation, observing and grading of risks (based on their chance of occurrence and impact) that possibly could result in humanitarian predicament. The objective of risk examination and monitoring is to become aware collectively of the probable risk issues and initiate advance preparedness actions to cater for such risks. Risk management becomes less effective when there is lack of coordination with the main stakeholders such as governments and other humanitarian players. Cozzolino et al (2012) adds that the major stakeholders to disaster respite actions should always be proactive to settle on the gravity of the risks and the APAs to be engaged.

2.5 Advance Preparedness Action (APAs) and Contingency Planning (CP)

Particular risks cannot be planned for or responded to without the implementation of these two intertwined emergency preparedness actions and thus APAs and CP (Kovács & Spens, 2007). These are course of actions to be taken when risk analysis and monitoring demonstrates moderate to high risk. The relevance of implementing these two control measures to emergency preparedness towards any disaster is to advance preparedness to respond to a particular risk. Dissimilar to MPAs which are advanced and not directed to any specific risks, APAs are risk-particular (Charles et al 2010). APAs are usually meant to shape the already existing MPAs. Proper planning of the APAs includes indispensable readiness actions that foils and provides support to the contingency planning process. Contingency plans are directed towards providing response to what risk might occur, what might be needed when the risk occurs, what course of action is to be taken when the risk occurs, resources that might be needed to take care of the risk and breaches that needs to be connected.

3.0 METHODOLOGY

The study adopted a descriptive research design to gather response from 50 respondents across 5 Disaster Management Relief Organizations (DMROs) in Ghana using a questionnaire. The questionnaire designed consisted of five Sections; Section A-E and was prepared based on a 5-point Likert Scale of measurement with the exception of Section A which was measured using the nominal and ordinal scales of measurement. The five-5 point likert scale measurement ranged from 1 to 5. Thus, 1-Strongly Disagree, 2-Disagree, 3 –Indifference, 4-Agree and 5-Strongly Agree.

This implies that average responses skewed towards 1 (below 3) was deemed rejected item and those skewed towards 5 (above 3) was deemed accepted or agreed upon items. The first part of the questionnaire was labelled Section A which consisted of information about respondents' background information. Respondents were asked to indicate their gender, age, affiliated department and years of experience. Section B asked questions relating to the existence of humanitarian logistics plan among DMROs in Ghana. Section C focused on examining the contingency approach and the extent of preparedness and recovery for disaster management.

In section D, questions were centered on challenges that confront humanitarian logistics operations in Ghana. The data that was obtained was analysed using both quantitative and qualitative methods. Statistical Package for Social Sciences (SPSS) version 20, a computer aided data analyses software was used to analyse data. Descriptive statistics like the mean distributions, standard deviations, frequencies and percentages were used to present results obtained in the study.

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4.0 RESULTS AND DISCUSSION

Table 1: Background Information of Respondents

Parameters	Frequency	Percentages (%)
Gender		
Male	39	78.00
Female	11	22.00
Total	50	100.00
Age		
Below 31years	19	40.00
31-40 years	16	30.00
41-50 years	10	20.00
Above 50 years	5	10.00
Total	50	100.00
Education		
HND	10	20.00
Bachelor's Degree	29	58.00
Master's Degree	5	10.00
PHD	4	8.00
Professional Cert.	2	4.00
Total	50	100.00
Department		
Logistics	12	24.00
Operations and planning	6	12.00
Procurement Administration	6	12.00
Engineering/Technical Advisory	6	12.00
Materials Management	6	12.00
Audit	6	12.00
Others	8	16.00
Total	50	100.00
Experience		
Less than 5 years	11	22.00
5-10 years	29	58.00
10-15 years	7	14.00
Above 15 years	3	6.00
Total	50	100.00

Source: Researchers Field Survey

From Table1, 39 representing 78% of the total number of the participants were male while 11 of the respondents representing 22% were females. This clearly showed that there were more male participants than female in the survey. This variation, however, had no negative effect on the general outcome of the study. With regards to respondents' age distribution, 19(40%) of the respondents were less than 30 years. 16(30%) were between the ages of 31-40. 10(20%) of the respondents were between the ages of 41-50 years meanwhile 5(10%) were above 50 years. The results obtained showed that the respondents were of age and none was incapacitated, age-wise. This means every respondent to the study was capable of providing answers to the questions asked as indicated in Table 1.

Table 1 also showed that 10(20%) were holders of HND certificates. 29(58%) were First degree holders. 5(10%) were holders of Master's degree, 4(8%) were Doctorate degree holders and 2(4%) were professional certificate holders. From the above analysis, it could be said that all respondents had attained a tertiary education, were well educated and therefore knowledgeable to provide factual answers needed for successful completion of the study. According to Padgett (2008) dealing with change and more

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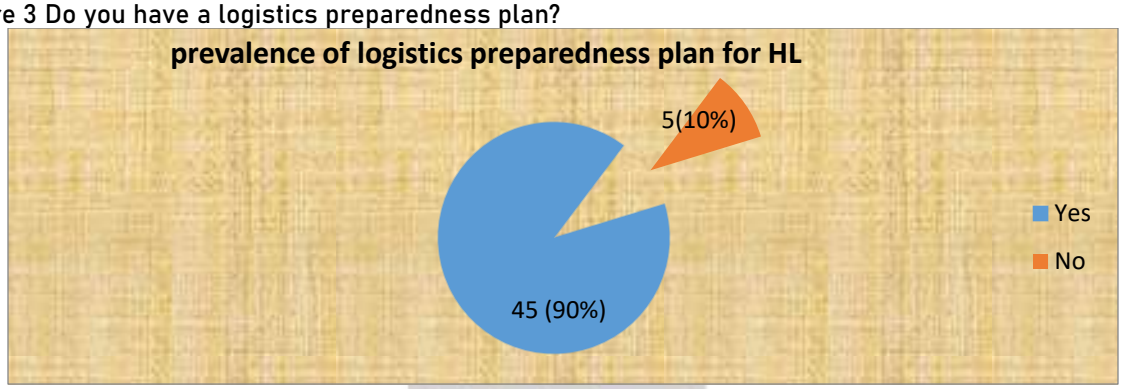
importantly the impact of change, requires organizations to pay maximum respect to the level of qualification and the skills of the employee since this contribute immensely to the achievement of organizational goals. Also displayed in Table 1 is the level of experience of respondents in line of their job.

Results obtained showed that respondents have been working for quite a number of years in disaster management and relief capacity and therefore possessed the requisite experience and were knowledgeable to provide credible answers to the questions asked in aid of successful completion of the study. With reference to Table 4.1, 11(22%) of the respondents had been working with for less than 5 years. 29(58%) have had 5-10 years of experience working with, 7(14%) of the respondents had 10-15 years of experience working meanwhile 3 of the respondents representing 6% have more than 15 years of experience working.

4.1 Existence of Logistics Preparedness Plan

This session seeks to determine respondents' view of the existence of humanitarian logistics (HL) plan in various organizations under study.

Figure 3 Do you have a logistics preparedness plan?



HL signifies Humanitarian Logistics,

FIG 3 Prevalence of Logistics Plan for Humanitarian Logistics

From Figure 3, respondents' views were sought on the existence of logistics plan for humanitarian relief operations. 45 (representing 90% of respondents) out of a sample size of 50 agreed that they have a well prepared and comprehensive logistics plan that covers several areas of disasters and fundamental approach for humanitarian disaster relief operations. However, few numbers of respondents (5 representing 10%) did not believe that there exists a humanitarian logistics plan that guides disaster relief operations in Ghana.

By and large, it can be concluded that DMROs in Ghana have a plan that guides it on how it coordinates logistics to respond to humanitarian disaster occurrence. Table 2 shows results on comprehensiveness of logistics preparedness plan (LPP) among DMROs in Ghana based on key logistics preparedness plan (LPP) parameters such as coordination, baseline data, contacts, map, standby agreements, operations and capitalization.

Table 2: Logistics Preparedness Plan

Parameters	N	Mean	Std. D
Coordination			
Recruit a Logistics and operations officer + Define term of reference (ToRs) and planning	50	1.7200	.78350
Set up a Logistics Coordination Group (LCG) + Define ToRs and Agenda	50	1.3600	.56279
Establish a planning for larger Logistics Coordination meetings (pre- and post-cyclones season meetings for preparedness and debriefing)	50	1.8200	.87342
Communicate / coordinate with all humanitarian actors (UN, NGOs, and Donors) to ensure that roles and responsibilities are understood.	50	2.0400	.83201

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Baseline Data			
Complete Logistics Capacity Assessment (LCA) at National level with missing information	50	3.0600	.97750
Define priority districts for "local LCAs" and ask Districts authorities to implement the assessment	50	3.7000	1.14731
Define annual mechanism to update the LCA	50	2.4400	.83690
Establishment of an "assets register" for transport assets, heavy equipment, SAR equipment, communication equipment, human resources + update mechanisms	50	3.5200	.64650
Set up a "central repository" for relevant logistics information, baseline data, contingency plans, disaster management information and tools, etc. (Ghana Alert Database, Website)	50	1.9800	.84491
Provide outline of local suppliers' capacities for key relief items, such as tarpaulins, jerry cans, hygiene and household equipment, blankets, plastic mats, and others	50	2.8600	1.34027
Create a central inventory of communication capacities in the country, including operational equipment, Police, Ministry of Health, Fire Division, Red Cross and religious bodies.	50	2.0200	.91451
Update and Mapping of existing emergency stocks (from UN, NGOs)	50	3.5600	1.48681
Contacts			
Create a Logistics contact list, with all key logistics related contacts (incl. Private sector) –include phone numbers, email addresses, sat phones numbers, radio frequencies and so on.	50	4.6000	.57143
Maps			
Get detailed operational maps (soft copies) for both national and local levels. Get those maps connected and feed them with infrastructure and operational information (bridges, evacuation centers, Red Cross local stocks, etc.)	50	3.8000	.40406
Standby Agreements			
Establish stand-by agreements with the customs for the setting up of the customs facilitation cell (to be activated during emergencies)	50	3.6600	1.04217
Develop a "to do list" for rapid registration of new agencies (NGOs) and mechanisms for clearance of relief goods during emergencies	50	3.7200	1.05056
Establish stand-by agreement with pre-identified private companies for cargo tracking system	50	3.8000	.40406
Establish stand-by agreements with owners of the pre-identified locations for temporary warehousing / storage at entry-points (ports and airports, Red Cross compounds at field level, etc.)	50	4.2200	.61578
Operations			
Agree on Standardized forms for supply chain management: CMR, tracking forms, stock reports and delivery forms	50	3.8400	.95533
Capitalization			
Draft lessons learned documents for logistics operations	50	2.0200	1.07836
Valid N (listwise)	50		

N denotes Population size, SD: Standard Deviation and M: Mean, ToRs: Terms of References, LCG: Logistics Coordination Group, UN: United Nations, NGOs: Non-Governmental Organizations, LCA: Logistics Capacity Assessment, CMR: Convention Relative au Contrat de Transport International de Marchandises par la Route

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Table 3: Mean of Means for Logistics Preparedness Plan

Measures	Number of items	Total Mean	Mean of Means
Coordination	4	6.96	1.74
Baseline Data	8	23.14	2.89
Contact	1	4.60	4.60
Maps	1	3.80	3.80
Standby agreements	4	15.4	3.85
Operations	1	3.84	3.84
Capitalization	1	2.02	2.02

Figure 4 Logistics Preparedness plan

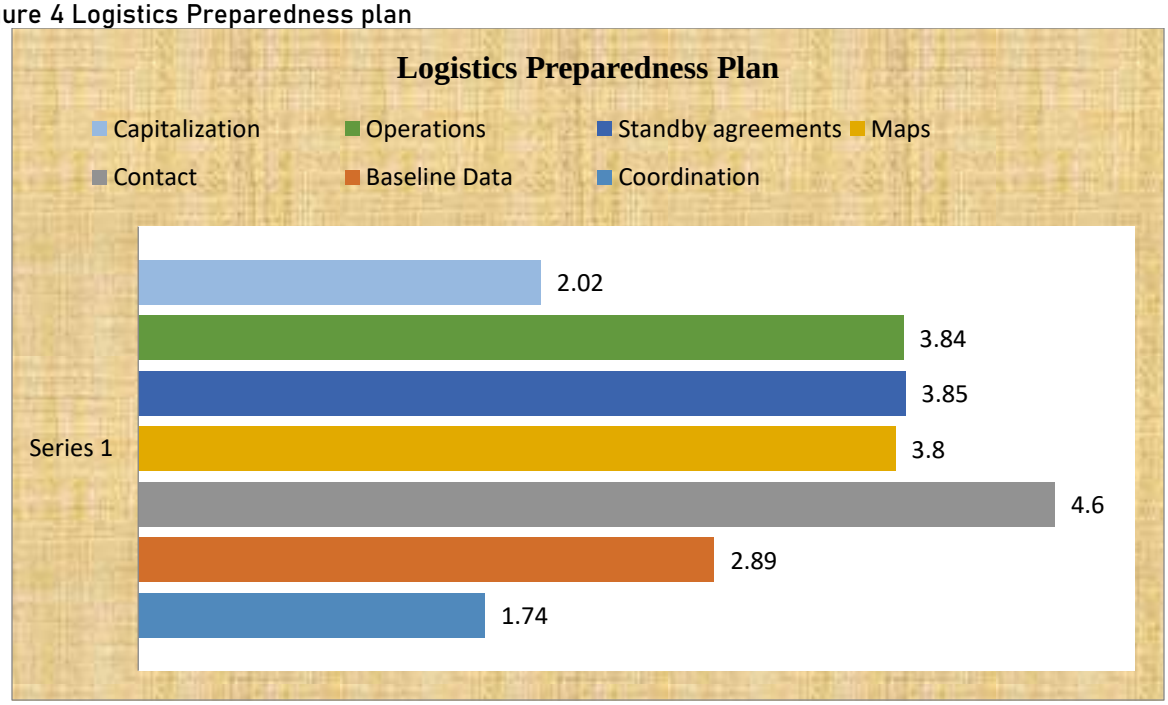

FIG 4 Logistics Preparedness Plan

From figure 4, seven (7) measures were used to determine the existence and comprehensiveness of the logistics alertness plan. These include; coordination, baseline data, contact, maps, standby agreement, operation and capitalization.

4.2 Coordination

Inferring from figure 4.2, "coordination" obtained a mean score of 1.74 out of a scale of 5.0. This clearly indicates weaker logistics coordination efforts by DMROs in Ghana with their agencies and stakeholders in humanitarian relief environment. This finding is in line with Balcik et al (2010) who adduced that logistics collaboration in humanitarian setting as compared to supply chain collaboration is at its infant stage.

Volz (2005) notes that resulting lack of logistics coordination in a humanitarian relief environment causes shipment delays and a mismatch between the aid provided and what is needed. Moore et al (2003) remarked that effective relationships and interactions among different actors operating within the relief environment are vital to enhancing responsiveness of logistics and success in humanitarian relief operations. Meanwhile, Cozzolino et al (2012) held that poor coordination of logistics activities and stakeholders in disaster setting reduces the effectiveness of risk management in humanitarian relief operations.

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4.3 Baseline Data

Mean of means of eight different items targeted at determining the extent to which DMROs in Ghana consider baseline data gathering and maintenance as part of its logistics preparedness plan reveals a score of 2.89 out of a scale 5. This shows a weakness in the ability of the organization to gather and update information or data needed to feed into the logistics preparedness planning process. According to Cozzolino et al (2012) crucial to having accurate and all-inclusive logistics preparedness plan is the need to have a baseline data if available and building on existing collection system. This would help ensure that accurate response plans are in place and the necessary information is fed into the logistics system to make it more responsive in meeting the needs of affected victims in a disaster response operation.

4.4 Contract

Maintain logistics contact list obtained a high mean of 4.60 out of a scale of 5.0. This shows DMROs' ability when it comes to keeping and maintaining a logistics contact list with all principal logistics associated contacts including their phone numbers, email address, radio frequencies and any other information that would facilitate the reach of contacts

4.5 Maps

Developing a detailed operational map for both national and local levels scored a mean of 3.80. This implies that DMROs, as part of their logistics preparedness plan process get detailed operational maps (soft copies) for both national and local levels. Balcik and Beamon (2008) opined that for organizations to achieve effectiveness in their logistics preparedness plan, it is required that organizations get those maps connected and feed them with infrastructure and operational information (bridges, evacuation centers, inventories and so on).

4.6 Agreement

Standby agreement obtained a mean sore of 3.85 out of a scale of 5.0. This reveals that to some extent, DMROs develops standby agreement with key parties as a readiness strategy for logistics response. The standby agreements take care of emergencies that might arise in the humanitarian relief environment. According to Van Wassenhove (2006) standby agreement with emergency standby partners helps in improving the efficiency and predictability of emergency response by deploying qualified personnel at no cost to humanitarian organizations and a service package that is usually combined with a support team that will set it up and train organization's staff before handing the equipment over, or bringing it back to place of origin. Having a standby agreement helps to complement an organization's capacity to provide a particular technical service during a disaster response.

4.7 Operation

Operations scored a mean of 3.84 out of a scale of 5.0. This shows that to some extent DMROs have agreed on some standardized forms for supply chain management: Convention Relative au Contrat de Transport International de Marchandises par la Route (CMR), tracking forms, stock reports, delivery forms and any other operational activity including, transportation, storage and distribution that facilitates readiness to respond to a disaster operation.

4.7 Capitalization

Finally capitalization shows a very low mean of 2.02 out of a scale of 5.0. This shows a weakness in documentation and keeping of records on lessons learnt for logistics operations. Keegan and Turner (2001) revealed in his study that humanitarian success in a given relief project is partly based on previous success chalked through culture, motivation and clear processes.

4.8 Contingency Preparedness Approach

This section seeks to determine the approach to contingency planning and emergency preparedness adopted by DMROs in Ghana. Results have been presented in the Figure below.

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Figure 5 Contingency Preparedness Approach

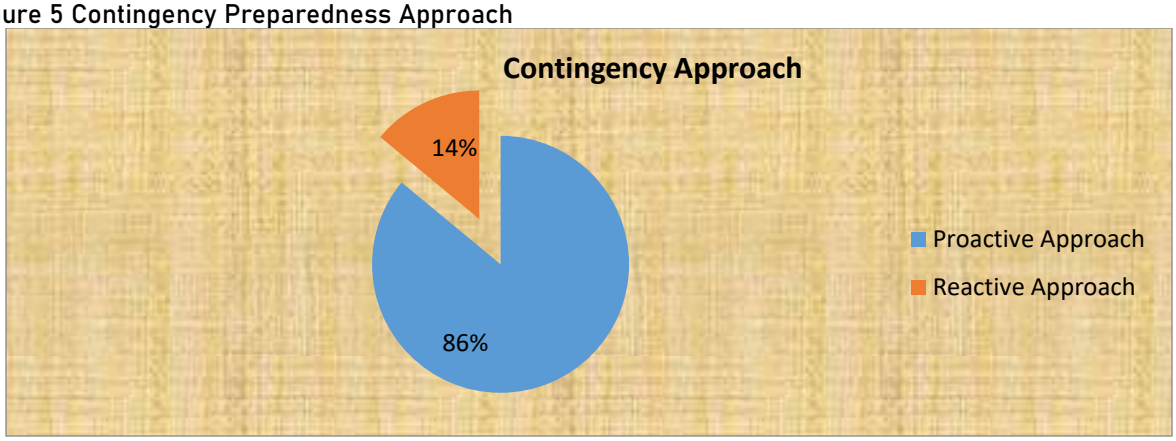

Fig 5 Contingency Preparedness Approach

From the Figure 5, majority of the respondents 43(86%) designated that DMROs adopt a proactive approach to contingency planning for emergency response. On the other hand, 7(14%) believes that DMROs have been reactive in its emergency preparedness to respond to a disaster. To further determine the approach to contingency planning adopted by respondents, a list of statements was provided and respondents were asked to indicate the extent to which they agree or disagree to the statements. Results have been presented in Table 4 below.

Table 4 Contingency Preparedness Approach

S/N	Contingency Approach to Logistics Minimum Current Response Capacity	N	Mean	SD
1	Capacity building	50	4.3704	.62929
2	establishment of coordination and management arrangements	50	4.2593	.44658
3	preparing for joint needs assessments	50	3.7407	.76423
4	response monitoring	50	3.3704	.49210
5	Early warning systems	50	4.4074	.63605
6	Creation and maintenance of stand-by capacities and the Stockpiling of humanitarian supplies	50	4.6296	.56488
7	establishing operational capacity and arrangements to deliver critical relief assistance and protection	50	3.6667	.48038
	Information Management			
1	Gather and manage accurate information management	50	4.5185	.64273
	Risk Analysis and Monitoring			
1	Ongoing risk and vulnerability assessment	50	4.6667	.48038
	risk monitoring	50	4.1481	.36201

N denotes sample size; SD denotes standard deviation

The mean of means of the various items explaining contingency preparedness approach has been further represented on the bar graph in Figure 6

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Figure 6 Contingency Preparedness Approach to Emergency Response

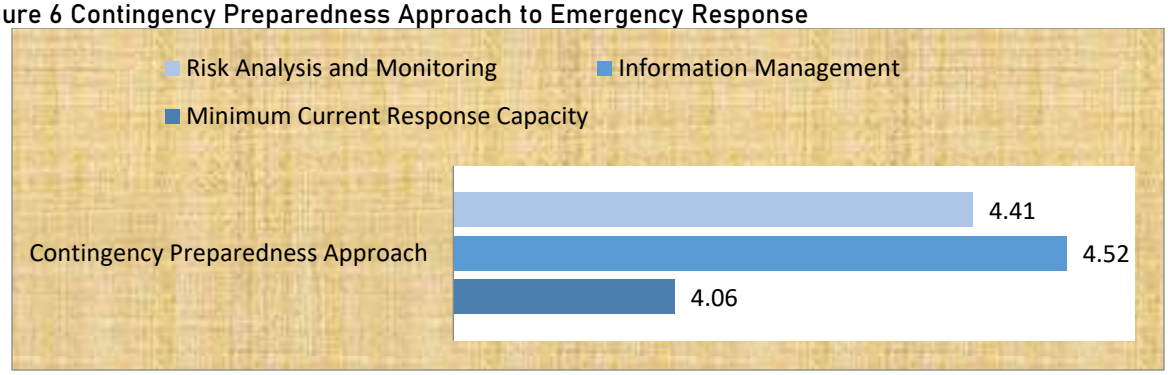

Fig 6 Contingency Preparedness Approach to Emergency Response

From the Figure above, it is evident that all elements of the contingency preparedness planning approach scored higher marks greater than a median of 3.0 on a scale of 5.0. This is enough indication to conclude that DMROs adopt a proactive approach to contingency planning and preparedness in Ghana. According to Van Wassenhove (2006) implementing a proactive approach to contingency planning preparedness brings about an important difference to immediate response and offer flexibility to respond to dissimilar forms of emergencies.

4.9 Challenges Facing DMROs in its Logistics Response Operations

This section seeks to determine the challenges facing DMROs in their logistics response operations. Results have been presented using mean and standard deviation and have been further ranked to determine how challenging a factor is to Logistics response operations among DMROs in Ghana.

Table 5 Challenges of Logistics Response Operation, NADMO

Parameters	N	Mean	Std. Deviation	Rank
Inadequate financial resources to improve on logistics activities and responsiveness	50	4.5000	.50508	3rd
Poor coordination of logistical activities	50	4.2600	.48697	6th
Inadequate personnel to take responsibility for certain preparedness actions	50	4.4600	.73429	4th
Low outreach and bad public perception	50	3.6400	.48487	9th
Inadequate technology investment	50	3.3600	.77618	10th
Lack of knowledge of regional political economic & socioeconomic conditions	50	3.7200	.75701	8th
High uncertainty and urgency characterizing response efforts	50	4.3400	.77222	5th
presence of multiple stakeholders who often act with different objectives	50	4.6600	.59281	1st
Limited infrastructure	50	3.7800	.58169	7th
Insufficient training and capacity building programmes for persons in charge of disaster relief supply chain	50	4.5200	.76238	2nd
Valid N (listwise)	50			

The table above shows the results of analysis on the challenges confronting DMROs' logistics response operations. From the Table 5, the mean of each descriptive item as derived from the statistical package for social sciences analysis show high mean scores greater than 3 on a scale 1-5 (1- strongly disagree, ……,5- strongly agree). This shows that each of the descriptive items bedevils the operations of DMROs in their disaster response operations. To determine the degree of the challenges on the logistics response operations of DMROs, the median of all means (averages) was calculated and arrived at to be 4.30. This implies that all descriptive items ranging from 4.30 and above are critical and acute as far as

challenges facing the logistics response operations of DMROs are concerned. Items in these pool include; presence of multiple stakeholders who often act with different objectives (4.66>4.30); Insufficient training and capacity building programmes for persons in charge of disaster relief in supply chain (4.52>4.30); Inadequate financial resources to improve on logistics activities and responsiveness of DMROs (4.50>4.30); inadequate personnel to take responsibility for certain preparedness actions (4.46>4.30) and High uncertainty and urgency characterizing response efforts (4.34>4.30). Inadequate infrastructure, lack of resources to finance humanitarian actions (Kovács and Spens, 2007), difficulty in gathering real time information and low capacity of humanitarian workers are some challenges facing humanitarians' organizations in their operations (Kovács and Spens, 2007; Akhtar et al. 2012). This is an indication that findings conform to existing literature.

5.0 CONCLUSION

While there is a growing body of research in humanitarian logistics, it is predominately focused on the western world. Indeed, there are relatively few studies which cover these aspects of emergency preparation in the humanitarian logistics in Africa and Ghana to be specific. The quest to fill the research gap, propelled the researchers to examine the contingency preparedness towards humanitarian logistics among DMROs in Ghana from the ground up and, in doing so, hopes to offer a better understanding of the existence of a humanitarian logistics plan and other logistical issues faced by DMROs in Ghana.

To achieve this, the study adopted a descriptive research survey approach where 50 officers were simple randomly selected from the various organizations whose roles are related to disaster management in Ghana. Questionnaire was used as the instrument for data collection. Data collected was subsequently analyzed using SPSS v. 20.0.

Besides the existence of a logistics plan, the study revealed that though DMROs adopt a proactive approach to its contingency preparedness towards humanitarian logistics. Nevertheless, a lot more efforts are needed in the area of staff planning, coordination of humanitarian actors and a robust baseline data management as these are crucial to provide high readiness solutions. Future researchers are encouraged to conduct more studies into the logistics management during disaster recovery phase and the need for closer relationships between academia and practice in the *humanitarian environment.*

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