

South African Humanitarian logistics: Aspects of emergency preparedness against Natural Disasters

Tatenda T Chingono and Charles Mbohwa
Department of Quality and Operations management
University of Johannesburg
South Africa
ttchingono@uj.ac.za

Abstract

Disasters are often unpredictable and uncertain, most governments struggle to assist victims of disaster mainly due lack of capital and sponsors. Although one cannot be really certain, natural disasters like floods and hurricanes are unpredictable but can be prepared for. This is crucial for efficient response. Which generally means emergency planning is never enough, therefore South Africa needs a framework detailing how the humanitarian logistics will be used to prepare and prevent natural disasters like floods. Relief agencies have to put their focus on the models developed for immediate response, which involves items like medication and capacities (rescue teams and rescue equipment).

Keywords

Humanitarian supply chains, Logistics, natural disasters

1. Introduction

Disasters are often unpredictable and uncertain, most governments struggle to assist victims of disaster mainly due lack of capital and sponsors. Although one cannot be really certain, natural disasters like floods and hurricanes are unpredictable but can be prepared for. This is crucial for efficient response. Which generally means emergency planning is never enough, therefore South Africa needs a framework detailing how the humanitarian logistics will be used to prepare and prevent natural disasters like floods. Relief agencies have to put their focus on the models developed for immediate response, which involves items like medication and capacities (rescue teams and rescue equipment). Emergency response involves demand and supply aspects

Recent years the natural disasters have (2016 floods and 2015 drought in South Africa) captured international attention and advance research of natural disaster management have been conducted and response of emergency relief agencies have been effective and efficient. Before the end of 2015 South Africa had rainfall problems, Southern Africa experienced drought that crippled the agricultural sector, with production shortfall of maize around 9.3 million tons and South Africa alone had to import 8 million tons of maize to feed disadvantaged people. RIASCO action plan targeted 13.8 million people for emergency food assistance. Thousands of children required treatment for malnutrition. 39% of population had inadequate sanitation facilities, the drought exacerbated these already fragile situations. Disease outbreak increased due to people being forced to drink unprotected water

Starting of the year 2015 in January South Africa experienced the start of water crisis and implemented strict regulations to save water, some areas did not have water at all. South African Government tried to supply water to affected rural areas and townships using water trucks, which was not good enough to cover everyone. Months later South Africa was struck by drought, and more people got affected including farmer and animals. The water crisis affected schools and learners were forced to leave school earlier than the normal school hours. Local Businesses affected by the crisis received incentives from the government. Recently Cape Town has been struck by water crisis and the ruling political party in CPT announced the shocking statement weeks ago.

1.1 Objectives

- identifying what has been done to alleviate the suffering of the people.
- To identify what aid was donated by who, if it was enough and how the aid was transported and distributed
- To give recommendations on how the problem could be resolved

2. Methodology

Several interviews were conducted with people who specialize in the emergency field and analyzed data of impacts of drought was conducted too. The design of the paper provides a review of academic literature and illustrative graphs. There is strong need for empirical research in the humanitarian logistics field.

3. Results and findings

The government and partners have initiated climate resilience building measures to affected regions. SADC introduced Trans-Boundary water program and resilience interventions such as:

1. rainwater harvesting at household and community levels
2. Strengthening and increasing access to drought resilience
3. Promotion of improved and sustained approach to sanitation
4. Strengthening water resources management at regional and local levels

3.1 Funding

Funding from international organizations and national government helps a lot in saving lives, \$900 million was raised for humanitarian programmes in the RIASCO action plan. Funding is a crucial tool when preparing for disaster relief it helps with buying resources that will be needed for response. Vehicles and trucks are not good enough when responding to a flood disaster, helicopter, boats, lifejacket, detecting machines to search for dead bodies etc. Food and security needs to be provided to affected people and costs for doing that needs to be covered. RIASCO provided funding to suffering countries

Sector	Funding requirement(\$)	Funding received (\$)	Gap (%)	Gap
Nutrition and health	134,082,850	72,246,186	48	
protection	15,583,332	35,967,059	38	
Early recovering	2,500,000	9,587,342	-	
Food, security and agriculture	1,034,146,156	748,192,530	28	
Wash	112,874,258	35,967,059	68	
Total				

Fig 2: Humanitarian Drought Response Funding by RIASCO

Recommendations

1. Creation of linkages between political decision makers and early warning should be stronger to generate informed early action plan.
2. Systems should be put in place to ensure that community level engagement always reaches the people in power.
3. Advocacy should be undertaken for government to take ownership of the emergency relief and fund the national emergency agencies.
4. Collective agreements on assessment methodology at national sectoral level must be reached when preparing for disasters,
5. The standardization of assessment methodologies and response modalities in all sectors and across SADC member states will improve the humanitarian response

6. Humanitarian coverage interventions must be geographical, with the range of basic services.

Opportunities

There were three gaps found:

(i) preparedness as relief response: people around the world are affected by droughts and floods and not all of them get help. The government, agencies and international sponsors invest too much money in strengthening the defense response and in floods alarming systems. Half of the money that get spent on the systems should be used at the local level for ensuring that people get goods during floods and get proper equipment to prepare for such disaster. (ii)

Response: it is always necessary for government to respond on medium sized floods, floods that can cripple the economy for shorter time. Normally international agencies and donors are unlikely to be available when responding to a medium sized floods, and the local solutions become inadequate, because normally the local supply chain will be disrupted and emergency relief will require coordinated effort involving local government, producers of basic products and NGO's.

(iii) Economic recovery: small businesses that are affected by floods do not get any incentives from the government, which makes it hard for the businesses to recover and any economy without small businesses suffers.

Proposed solutions for disaster response

- Ensuring the distributing of materials to micro retailers not to be disrupted
- Engaging micro-retailers as flood relief response (collaboration government etc)
- ALL unnecessary waste should be eliminated from the process
- Where possible ship bulk unassembled and unpackaged relief items to more local locations for final assembly or packaging closer to the victims
- Increase flexibility and agility of the supply chain such that they can be quick enough to react to the ever changing uncertainty of the humanitarian supply chain.

Conclusions

South African Emergency Services did not cope or did not managed to cover every area that has been affected, therefore, the paper added logistical decisions that can be used to tackle the response disaster: supply management, Resource management and demand management. The paper touches the drought impact from humanitarian view, and the recommendations that SADC region can use for the future when dealing with such events. We also address the water crisis in South Africa, and WASH organization (Water, Sanitation and hygiene). SADC leaders implemented new interventions.

The papers found Gaps in the solutions of emergency relief phases, preparedness, response and recovery. With our efforts we came up with proposed solutions that can work for South Africa. Generally, the paper concludes that there is more attention for logistics emergency planning for

flood disaster prevention, but more can be done if South Africa can receive funding from international donors. The issue of drought, floods and water crisis can cripple the economy and the people that is how serious the matter is. Local people should be given proper equipment to prepare and protect their homes and businesses from flood disaster.

References

- Balcik., Beamon B.M., (2008), facility location in humanitarian relief, *International Journal of logistics: Research and Applications, Vol. 11,*
- Balcik., Beamon B.M, Smilowits K., (2008), Last mile distribution in humanitarian relief, *Journal of intelligent Transportation Systems, Vol. 12,*
- Ahrens, J. and P. M Rudolph (2006). The importance of Governance in Risk Reduction and Disaster Management. *Journal of Contingencies and Crisis Management.*
- Alexander, D. (2005). Towards the development of a standard in emergency planning. *Disaster Prevention and Management.*
- Kovac`s, G. & Spens, K.M. 2007. Humanitarian logistics in disaster relief operations. *International journal of Physical Distribution & logistics Management*
- Van Wassenhove LN., (2006), Humanitarian aid logistics: *Supply chain management in high gear, Journal of the Operational Research Society, Vol. 55*
- Ozdamae, L., E. Ekinici et al. (2004). Emergency Logistics Planning in Natural disasters. *Annals of Operations Research 129.*
- RIASCO Action Plan 2016-2017, Report
- G. de Villiers., G. Nieman. & W. Niemann. Second Edition Strategic Logistics Management: *A Supply chain management approach.*

Biographies