Humanitarian Logistics: A Key Factor in Disaster Management

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ABSTRACT:

Recent natural disaster in two prominent southern states of India namely Kerala and Kodagu a district located in the southwestern part of Karnataka, has brought into light the importance of humanitarian logistics as a critical element of disaster relief process. This research titled "Humanitarian Logistics: A key factor in Disaster Management" highlights the need and importance of an active participation of the local communities, Non-Government Organizations, citizen volunteer groups, etc., of a disaster-affected area in the process of humanitarian logistics and also showcases the efforts by the authorities to integrate and help the local community in the humanitarian logistics required in the process of disaster-relief though case studies.

Keywords: *Humanitarian Logistics, Local Community, Disaster-Relief, Government, Natural Disaster.*

INTRODUCTION

Disaster Information Volunteers (DIV), a brain child of The Government of India is a group of trained volunteers providing real time firsthand information about their local community during a disaster, ongoing relief activities and mitigation plan (The Economic Times, 2017), is the result of experiences and lessons learned from the disaster caused by multi-day cloudburst centered on the North Indian state Uttarakhand, causing devastating floods and landslides in 2013, disastrous floods caused by torrential rainfall in Kashmir valley in 2014, strong tropical cyclone Hudhud causing extensive damage and loss of life in eastern Indiain 2014, flood due to heavy rains in the Coastal region of the South Indian states of Tamil Nadu and the city of Chennai particularly being the major victim in 2015, to note a few.

The complexity and the urgency during a disaster necessitated specialization and coordination both important and challenging, *(Beamon, 2004; Oloruntoba, 2005; Schulz, 2008; van Wassenhove, 2006)* resulting in the emergence of an efficient Humanitarian Logistics system.

The primary responsibility of humanitarian logistics revolves around

procuring and delivering required supplies and services to the disaster hit location and in the right hour they are required.

Aftermath of any disaster require basic necessities that are important for survival, like food, water, temporary shelter and medicine to name a few which needs efficient logistics as it comprises social network of individuals conducting a series of technical activities along with the aid of support systems such as transportation and communication *(Veras, Jaller, Van Wassenhove, Pérez, &Wachtendorf, 2012).*

OBJECTIVES

The objective of this monolog is to highlight the importance of co-dependency of the members of a community with each other as well as their surroundings in humanitarian logistics during disaster relief process through case studies.

LITERATURE REVIEW

Humanitarian Logistics

Humanitarian logistics can be defined as "the whole 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. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, customs and clearance" (Thomas, 2004). Whenever a disaster strikes, it leaves casualties behind.

Humanitarian logistics includes the complete process of planning, distributing, managing and controlling the relief operation post-disaster. Depicted below is one of the simplest model of Humanitarian Logistics.

Humanitarian logistics is focused on saving lives rather than making profits. With around 160 million people affected by disasters worldwide and 90,000 casualties, humanitarian aid during disaster relief as well as management has to be extremely effective (Environmental Health in Emergencies; Natural Events, n.d.).

Fig. 1: Humanitarian Logistics Model

It has been observed that up to 80% of the total cost for disaster relief is taken up by Humanitarian Logistics (Van Wassenhove, 2006). The magnitude of utilization make it all the more critical and import for an efficient and effective Humanitarian Logistics process.

Community

What is a community? Oxford dictionary's definition for a Community is "A group of people living in the same place or having a particular characteristic in common". To substantiate this statement, human beings are social creatures and being part of a community is extremely important to them. Community provides support to its members by pooling in collective resources and by connecting different relationships together. It helps individuals to overcome dire situations (Zamor, 2005). Therefore in simple, community is a collection of people formed due to a common sense of well-being and belongingness and it occupies a geographical region. Based on the features of the area occupied, the community's internal factors like solidarity and unity are formed. In this way, individuals are co-dependent on each other and their surroundings to form a functional community (Aryan, 2017).

Community Driven Development

A World Bank Initiative: The World Bank defines Community Driven

Development (CDD) as "programs operating on the principles of transparency, participation, local empowerment, demand-responsiveness, greater downward accountability, to enhance local capacity" (The World Bank, 2015).

Case Studies

Due to the wide range of its applicability, it is difficult to discuss on all the events that has occurred in India and around the globe. In this section, we have considered few important events which brought national and international attention.

Kerala Flood – 2018

Due to heavy torrential rains (56% excess rain fall than usual) during monsoon season, south Indian state of Kerala experienced its worst flood starting August 8, 2018 claiming over 483 precious lives. Approximately a million people were evacuated from 14 districts and around one-sixth of the total Kerala's population was directly affected. Indian government declared it as Level 3 calamity. With no precedence in history, thirty-five out of the fifty-four gates were opened and all overflow gates of Idukki Damwas simultaneously released resulting in floods and landslides. Due to severe landslides, hilly districts of Wayanad and Iddukki were isolated from rest of the state. The intensity of destruction called for a continuous and regular monitor from the Prime Minister of India and the National Crisis Management Committee. The estimated loss and damage due to the devastating deluge is more than INR 20,000 crore.

Fig. 2: Rescue operation in flood-hit locality of Thiruvananthapuram on Aug 15, 2018

As part of the rescue operation, The Cabinet Secretary, Defense Services, Secretaries of Civilian Ministries along with Chief Secretary of Kerala launched a massive relief operation which included 40 helicopters, 31 aircraft, 182 rescue teams 18 defense medical teams, 58 NDRF teams, 7 companies of Central Armed Police Forces with more than 500 boats. Further an estimated 4,537 local fishermen joined hands with the rescue teams with 669 fishing boats rescuing more than 65,000 people of different districts.

Kashmir Valley Flood – 2014

Indian state of Jammu and Kashmir and few regions around the state received heavy rainfall during the last stage of Indian monsoon which triggered flooding and land slide. Thousands of villages were badly affected submerging approximately 390 villages. As per the preliminary report, the estimated property loss was INR 5,000 crore to INR 6,000 crore with an estimated total of INR 1 trillion in Kashmir division.
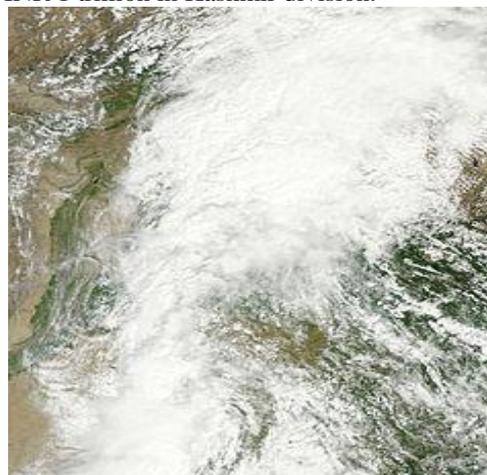

Fig. 3: This image of the northern Indian subcontinent captured by NASA on 4 September 2014 shows that heavy clouds over Jammu and Kashmir.

Intense rescue operation was conducted by the government and the local volunteers. As part of the rescue operations, 82 aircraft and helicopters, 329 columns of Indian Armyand 300 boats, 10 battalions of BSF and 10 VSAT was used. As an alternate to the lost communication lines, Indian army converted their old Indian Juggar into mobile charging points which enabled people to charge their phones and opened the

communication lines in the affected regions. 50 tons of supplies like food, water and medicines through Two IL 76, One C-130J and one AN 32 aircraft were delivered and 300 boats were deployed to excavate people from submerged areas. In addition 200,000 affected people were rescued by the Armed Forces including Boarder Security Force and National Disaster Response Force. Further the involvement of local youths played a vital role in the rescue operation to the extent that every alternate boat owned by the Indian Army was allocated to local volunteers which eased and accelerated the rescue operations.

The Uttarakhand/Kedarnath Tradegy – 2014

On 16 June 2013, 169 pilgrims were killed by flash floods (report by State Government on 9th May, 2014) caused due to cloud bursts and torrential rain. Massive landslides buried roads as well as people underneath, causing a mass cremation. Districts- Rudraprayag, Chamoli, and Uttarkashi were the worst hit, and about 90 dharmshalas were swept away. 4021 people went missing and haven't been found till date (report by State Government on 9th May 2014). Due to poor connectivity and communication, the rescue operation efforts of the Indian Air Force, Army, as well as the State Government were hampered. (The Indian Express, 2018).
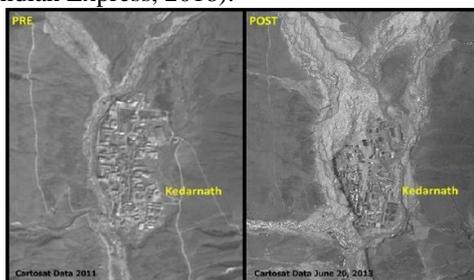

Fig 4: Pre and post Kedarnath land slide disaster ISRO released for public information.

Hindrances for rescue operations were difficult terrain, adverse weather conditions, disrupted roads and Lack of telecom connectivity.

The Government of India provided all the necessary support needed and mobilized the National Disaster Response Force on June 16th. It also provided the support of

armed forces and paramilitary forces. The State Government requisitioned the rescue forces as well as formed a Coordination Committee under the leadership of the Chief Secretary. 120,000 stranded people were rescued within a fortnight, and 69 relief camps were set up to provide residence to 151,629 people. 900 trucks carried relief materials from other Indian States. 43 medical teams were dispatched on site which comprised of 313 doctors, and 4977 paramedics to provide first aid services to those who were injured.

Name of Organization	Teams/personnel deployed	People rescued
NDRF	14 teams	9044
ITBP	1600 personnel	>33000
IAF	45 helicopters	>23500
Indian Army	8000 personnel 150 Special Force troops 12 Army helicopters	>38500
Civil Aircrafts	20	12000
Nehru Institute of Uttarkashi	5 rescue teams comprising of 20 instructors and local youth	>6500

(Satendra, Kumar, & Naik, 2014)

The Landslide in Oso, Washington – 2014

The landslide on March 22, 2014 in Oso, Washington had a very basic approach to disaster relief. 43 lives were claimed in this landslide-prone area. It raised the important question of whether proper planning could have prevented the loss of lives. According to studies conducted, the respondents from different focus groups stated that they were angry and confused by the rescue agency's lack of coordination, and clear disregard for the local community's feedback. To state one of the respondents, "I think that any feedback that we would give to them, or we heard about how they were going to come in and take over, how they don't make any attempt

to learn about the community they're coming into. And it would make a huge difference …because they have their, their own protocols and procedures. That's what they know and they don't care about the rest" The author of the paper concluded that a lot of the pain could have been alleviated if the local aids, who knew the area well and could respond to the needs of the people of that community, were utilized properly (Brookman, 2015).

DISCUSSION

The above cases highlights the need for an effective, efficient and quick response during a disaster which would reduce the number of causalities. Experience has proved the importance of local community in the various stages of humanitarian logistics.
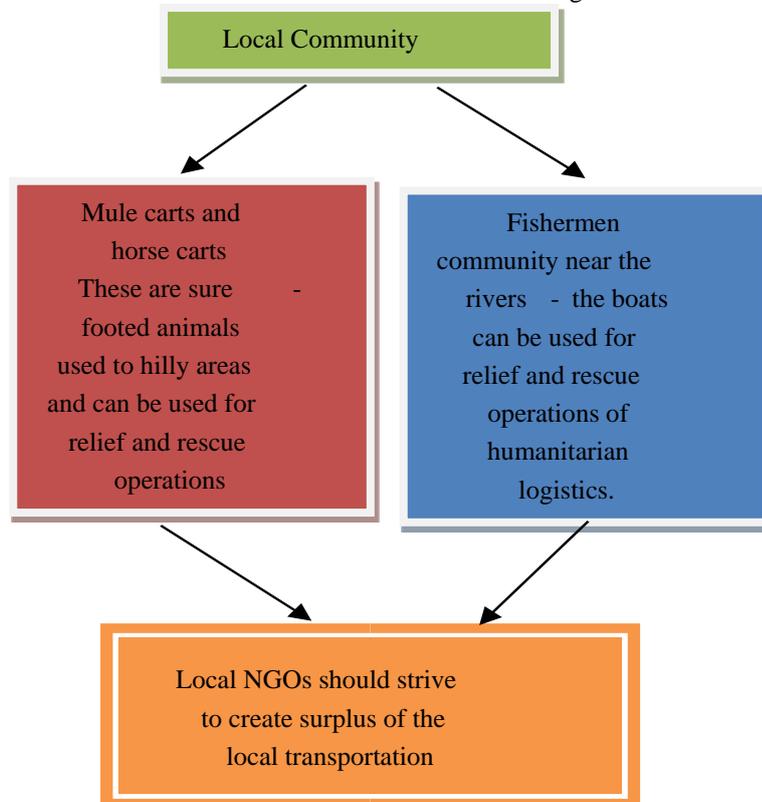

Fig. 5: Simple local community-based approach designed for Kedarnath incident

The local community has better access and knowledge about the layout of the disaster-struck area, and hence can help in navigating, supplying and rescuing functions of humanitarian logistics. Notably, all the stages, that is collection of funds, procurement of relief goods, storage in a warehouse, transportation to local warehouses, distribution of goods to local relief centers, and monitoring the delivery of goods to victims can be achieved through the aid of the local community and the resources offered by them. Instead of volunteers who are assigned post disaster, the municipality in disaster-prone areas should take the following steps as a predisaster precaution.

Collection of funds

Municipality can collect a certain sum of money from its jurisdiction on a monthly basis. This will be the "Disaster Fund".

Procurement of relief goods

Municipality shall employ the help of the local community in procuring local means of transportation, like boats, rafts, etc. The local community is also assigned with the task of taking good care of the animals used in transportation, especially around the disaster-volatile time period.

Storage in a warehouse

All the relief materials, as well as transportation aids collected from the local

community will then be stored in a central warehouse, in a safe and secure location.

Transportation to local warehouses

As the disaster-volatile time period draws close, the relief materials should be transported to the local warehouses, where the local community will store and segregate them.

Distribution of goods to local relief centers

During disaster-relief, along with the local volunteers, the various NGOs and Government bodies partaking in humanitarian logistics operations should distribute the goods to local relief centers. The help of the locals is very important at this stage since they know their area better than outsiders and can help save lives, time, money, and energy.

Monitoring the delivery of goods to victims

Each local relief center should be assigned with a mix of local volunteers, expert logisticians and relief providers. Together, they should ensure that all the victims get the relief goods, as well as actively participate in saving lives of those affected by the disaster.

CONCLUSION

Community-based approach should be designed in every disaster-prone area as local communities are resilient to the disasters of their region and are aware of the terrain. Local evacuation systems, canal systems, underground tunnels should be used as it plays a paramount role in disaster relief as well as the operations of humanitarian logistics. Future research should identify indicators which would further strengthen the approach and help in a better humanitarian logistics approach.

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