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All the best laid plans…conditions impeding proper emergency response

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ABSTRACT

Which conditions make it difficult to effectively respond to an emergency? The literature shows that even if emergency response plans are in place, the emergency response could still be hampered by a myriad of factors. What these factors are, however, remains unclear as authors provide different ideas on what can go wrong. Sometimes these ideas overlap, but sometimes they do not. In this article, we provide an overview of the factors impeding emergency response. We will illustrate each factor with examples drawn from the emergency responses in New Orleans following the Katrina hurricane and in Indonesia following the Tsunami.

1. Introduction

Emergency logistics is an emerging field (Chang et al., 2007, pp. 738–739; cf. Özdamar et al., 2004; Sheu, 2007b; Yi and Özdamar, 2007; Whybark, 2007) revolving around the distribution of rescue resources to facilitate search and rescue operations, provide shelter and food, and enable locals to become self-sufficient again (Özdamar et al., 2004, p. 217; Chang et al., 2007, p. 737; Yi and Özdamar, 2007, p. 1178). In other words, emergency logistics focuses on the response phase of disaster management.

The mission of disaster management (or emergency management) is to protect and assist the civilian population in the event of a natural or man-made disaster. The process of disaster management consists of four phases: prevention/mitigation, preparedness, response, and recovery (National Governors' Association, 1978). The response phase (or emergency response) is the phase during which activities are focused on emergency relief in order to save lives and meet basic human needs. The length of this period varies from a few days to months or even years according to the circumstances.

The emergency response is a two-stage process, the first stage being the life-saving/sustaining response and the second one being the self-sufficiency response. The life-saving component consists of search and rescue operations, when, for instance, victims are buried in debris after an earthquake or trapped in floodwater. The life-sustaining component involves the provision of the five human needs, i.e. food, water, temporary shelter, medical care, and protection (UNDAC, 2006, p. B 15). These two components constitute the first stage of the emergency response, which is considered effective when victims are rescued from life-threatening conditions and no longer have to worry about their own survival. At this point, they can take steps towards rebuilding their lives and restoring their livelihoods. In contrast, this stage is considered ineffective if all of the above needs are not met, which can result in the disaster's victims becoming the victims of a so-called second disaster (UNHCR, 2007, p. 32). Improper burial of corpses, for example, could result in an infectious disease killing the remaining survivors.

Regarding the second stage, the self-sufficiency response consists of reducing the affected populations' dependence on outside assistance to satisfy their basic needs. This process is a prerequisite to help disasters' victims restore pre-disaster living conditions and become autonomous again. This second stage of the emergency response is considered effective when victims no longer depend on outside assistance to survive. This perspective usually involves a long-term response strategy. Safe drinking water, for example, might require the repair of water supply structures. Relief operations therefore often embrace development activities.

As the above shows, emergency response is of vital importance and cannot be achieved without properly performing logistics operations; hence the importance of special issues such as this one to further our understanding of emergency logistics. However, no matter how good the preparation of emergency logistics operations, the execution of these plans may still fail because of the many difficulties inherent in emergency response. Coordination between organizations, for example, may not go that smoothly. In fact, the literature on crisis management and emergency logistics allude to this problem (Auf der Heide, 2006; Sheu, 2007a, p. 656).

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Too much can go wrong during the emergency response—not just in terms of coordination. However, information on what exactly can go wrong during the emergency response is scattered across a myriad of articles and books, leaving researchers at a loss. The aim of this paper is therefore twofold. First, to identify the conditions that could negatively affect the emergency response (see Appendix A for an overview). Second, since the literature can be quite vague about how to measure these variables, we will provide operationalizations of each variable, thereby providing those interested in emergency logistics with tangible variables.

To illustrate these variables, we will use two cases: the flooding of New Orleans following hurricane Katrina and the Tsunami in Indonesia. In August 2005, hurricane Katrina hit the states of Mississippi, Alabama, and Louisiana, and caused major breaches in the levees surrounding the city of New Orleans. The city was quickly flooded, causing the deaths of more than 1100 people and leaving many more in distress. On 26 December 2004, a magnitude 9 earthquake on the Richter scale off the coast of Indonesia triggered a Tsunami affecting 14 countries and killing more than 225,000 people.

These two events occurred in distinct settings and circumstances. On the one hand, the United States is one of the richest countries in the world,[1] with strong national institutions, considerable public infrastructures, significant emergency response agencies, and high levels of preparedness and experience in the field of hurricane management. One would expect that the above elements would facilitate the provision of emergency assistance in the wake of a long-anticipated natural disaster (Eikenberry et al., 2007, p. 165).

On the other hand, the countries affected by the South-East Asian Tsunami are among the poorest in the world.[2] There was no early warning system in that region, primarily because international expertise had wrongly assessed a Tsunami-related threat there. The authorities were not prepared for such a Tsunami; emergency management structures and contingency plans in the affected countries were weak or non-existent. These combined factors could lead one to predict that relief operations after a natural disaster of such a magnitude would unfold badly.

Yet in reality things were quite different. In the aftermath of the South-East Asian Tsunami, the basic needs of the affected populations were fulfilled rather effectively, given the extent of human casualties and material damage. During the initial response, the survivors received food, water, and emergency shelter; an effective system of rapid corpse burying avoided the emergence of a sanitarian crisis (Couldrey and Morris, 2005, p. 6). In contrast, the cries of hurricane Katrina's victims were heard by everybody around the world, but were not effectively responded to. US government, media, academics and affected communities all concur: the emergency response was ineffective—both at the life-saving/sustaining level and the self-sufficiency level. The US government, for instance, emphasized the "seeming inability of the 'government'—local, State, and Federal—to respond effectively to the crisis" (US White House, 2006, p. 1). It acknowledged that emergency plans at all levels of government were "put to the ultimate test, and came up short" (US White House, 2006, p. 1; cf. Simo and Bies, 2007, p. 132; Eikenberry et al., 2007, p. 160; Waugh and Streib, 2006, p. 131; US House of Representatives, 2006, p. ix and 1; Kettl, 2005, p. 2). A significant amount of sources seem to confirm that the emergency response was better handled in the wake of the Tsunami than after hurricane Katrina (Chua et al., 2007, p. 391; Brummitt, 2005).

To understand this discrepancy in emergency response, it is important to know which conditions could negatively affect the emergency response. We will use the emergency response in New Orleans—unanimously considered as the location where governmental response was the poorest (Derthick, 2007, p. 37)—and the emergency response in Indonesia—the country which sustained the most loss and damage in the wake of the Tsunami—to illustrate these conditions. In order to achieve this aim, we will first briefly describe the two disasters. Each condition is then introduced and illustrated with examples drawn from the two cases.

2. The two disasters

2.1. Katrina

On 23 August 2005, a tropical storm formed off the coast of the Bahamas and grew into a hurricane over the following week. On 25 August, the then category 1 hurricane made landfall in south Florida, and then continued moving further west, intensifying to a category 2 hurricane on Friday 26 August (US White House, 2006, pp. 22–23). On that day, the National Hurricane Center (NHC) released a forecast warning that the hurricane would make landfall near the city of New Orleans (US White House, 2006, p. 24). The governors of the states of Louisiana and Mississippi declared states of emergency for their respective states and preparation activities increased at the local, state, and federal levels, in order to support local responders (US White House, 2006, pp. 24 and 27).

On 27 August, Katrina strengthened to a category 3 hurricane, and the NHC warned that it was expected to become a category 4 hurricane. Louisiana's and Mississippi's officials issued evacuation orders for threatened areas—mandatory or voluntary depending on local governments. The mayor of New Orleans called for voluntary evacuation, but many residents did not want to evacuate, or could not do it because they did not, for example, own a vehicle (US White House, 2006, pp. 25–26; cf. Derthick, 2007, p. 38). President Bush signed a federal emergency declaration for the state of Louisiana on Saturday evening and for the states of Mississippi and Alabama on the following day (US White House, 2006, p. 27). These declarations were signed before landfall. They embodied the recognition that "Katrina had the potential to be particularly devastating" (US White House, 2006, p. 27) and sealed the assistance of the federal government.

On 28 August, Katrina rapidly developed from a category 4 to a category 5 hurricane (US White House, 2006, p. 28). The National Hurricane Center issued a warning that the levees in New Orleans could be overtopped (US White House, 2006, p. 28). Early that Sunday morning, President Bush urged Louisiana's governor to order mandatory evacuation of New Orleans and assured the governor that Federal government's support and resources were available to deal with the situation (US White House, 2006, p. 28). The city's mayor did eventually order mandatory evacuation, but by late afternoon evacuations were affected by the approaching storm and an estimated 70,000 people remained in the city (US White House, 2006, p. 29; cf. Derthick, 2007, p. 38). Shelter operations that had begun the previous day continued in the evening, and thousands of people were placed in shelters across several states. In New Orleans, the Superdome had been designated the day before as the shelter of last resort for residents with special needs, but it was now a shelter for the general population (US White House, 2006, pp. 26 and 29). By midnight,

[1] In terms of GDP per capita, the United States ranks 10. www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html (accessed on 21 June 2008). See also CoI (2007, p. 120).

[2] http://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html (accessed on 21 June 2008).