

Leadership in Disaster Management: Theory Versus Reality

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ABSTRACT

Leaders should be competent in managing disaster situations to minimize the damage of the events. However, when disaster strikes these leadership competencies may not always come into play. This paper aims to identify the incongruence between what leaders should do and what leaders do when managing real disasters and what can be learned from it. This paper reviews the Aceh Earthquake and Tsunami disaster in 2004 and the Fukushima Nuclear Disaster in 2011, as case studies. Published and grey literatures relating to these events were searched from online sources. Two major mismatches between leadership theory and reality were noted: effective communication and ability to co-ordinate resources at all levels. To improve leadership in disaster management, mitigation measures, preparedness and skills in crisis communication must be top-notch, communication disruption must be overcome as soon as possible; and all entities involved in disaster management must know their roles.

KEYWORDS: disaster management, leadership, Asia, crisis communication, competencies, preparedness, mitigation, earthquake, Tsunami, nuclear

INTRODUCTION

A disaster is defined as an occurrence disrupting the normal conditions of existence and causing a level of suffering that exceeds the capacity of adjustment of the affected community [1]. There are three conditions that need to be present in an event to render it a disaster: the event must be disrupting the normal conditions, exceeding the local capacity and affecting people. A disaster situation must always involve people, that without people, there would be no disaster, just a physical phenomenon [1].

Emergency is sometimes used interchangeably with the term disaster, such as in the context of biological hazards, technological hazards or health emergencies. These situations may be hazardous events that do not result in the serious disruption of the functioning of a community or society [2]. In the state of emergency, normal procedures are suspended, and extra-ordinary measures are taken in order to avert a disaster [1]. A crisis on the other hand is a situation when risks escalate out of control, and if a crisis creates

an unmanageable situation and cannot be contained, then disaster strikes [3].

Governance of disaster management is increasingly advocated as one of the important factors to reduce the risk of disasters, alongside the technical know-how of managing a disaster [4-6]. In the context of disaster management, disaster governance consists of “interrelated sets of norms, organizational and institutional actors, and practices that are designed to reduce the impacts and losses associated with disasters arising from natural and technological agents and from intentional acts of terrorism” [7].

In disaster management, the role of the leader is extremely important in bringing order in the state of chaos. Good leadership is the core of good governance. According to the Cambridge Dictionary, a leader is defined as the person in control of a group, country, or situation. Logically, leaders in disaster situation may be of various ranks, such as the incident commander at the disaster site, the government official in charge of managing the disaster or the Prime Minister or President



of a country where the disaster had occurred. In normal circumstances, leadership decisions are made after a process of deliberation, with the input and advice of experts in the area. These are usually supported by frameworks of legislation that provide formalized support and confirmation. However, leadership in disaster situation can be defined “as strategic tasks that encompass all activities associated with the stages of crisis management” [8], while the goal of management during disaster situation is “...to devise policy and to implement programs that will reduce vulnerability, limit the loss of life and property, protect the environment, and improve multi-organizational coordination in disasters” [9].

These roles of leaders and managers in disaster situations differ from normal situations because in disaster situations, the people under the leadership of the leader demand safety, support and sense of direction; positivity and hope of things getting better; shortened duration of suffering and want correct and reliable information [10]. These leaders must have the ability to make urgent decisions with limited or unavailable information due to compromise in communication channels [5,11]. Communication skills of leaders, especially crisis communication, is also extremely essential [12].

There are many core competencies of leaders in disaster management. Leaders in disaster situations must acclimatize to the surroundings and be accommodating in their decision-making processes. Apart from having good knowledge of established protocols, they must also be innovative and willing to extemporize the protocols when needed [5,11]. Leaders in disaster management must also possess emotional intelligence competencies such as empathy, self-awareness, persuasion and the ability to manage relationships [13].

Additionally, effective leadership in disaster situation is when the leader can articulately coordinate various responders of the disaster event [5,11]. However, are these competencies, which a leader theoretically should have, come into play during real disastrous events? This paper aims to explore if what leaders should do in disaster management and what leaders have done in managing real disasters, are the same. The leadership challenges during disaster events,

especially the reasons why those challenges occurred and how these challenges could be avoided in the future, are also explored.

METHODOLOGY

Two major disasters were purposively reviewed. Published and grey literatures related to these two disasters were searched from online sources. The level of disaster management reviewed was limited to the immediate period following the occurrence of the disaster event. This review does not assign responsibility nor apportion blame to any individual or entity that can possibly be generated by the disasters.

RESULTS

Case Study 1: Aceh Earthquake and Tsunami disaster in 2004

On 26 December 2004, the Indian Ocean massive earthquake registering 9.0 on the Richter scale occurred off the coast of Aceh province [14]. The resulting tsunami hit north-western coastlines of Sumatra especially in Aceh Province, Indonesia resulting in over 160 000 deaths and missing persons and displaced more than 500 000 people [15]. To make matters worse, the province has been under the rule of rebel groups from May 2003; hence access into the affected areas was even more restricted [16]. The Indonesian President declared the tsunami as a national disaster and had the mobilization of available resources including 20 000 Indonesian military troops who were already in Aceh to aid in the emergency response and rescue activities [17,18].

A report by the Stockholm International Peace Research Institute described that in the following day, there was overwhelming international response towards the disaster and resulted in a situation which was very confusing to manage due to several factors: there were no specific provisions concerning which international assistance should be asked for and received, while existing legislation did not allow for the presence of national and international non-governmental organizations in disaster response mechanisms. The Government sought the help of the United Nations to manage this situation [18]. Aceh, at that time was under the rebels' rule government, so there was initially

confusion in who was accountable in making key decisions. Many entities had claims to governing Aceh: the Satkorlak (the local unit of the national disaster-management agency), the surviving regional government, and the civil emergency military commander [18]. To end the confusion, the Indonesian Vice-President sent a high-ranking official from Jakarta to manage the Aceh Satkorlak, while the President declared Aceh open to emergency relief offered by the international community. He issued impromptu administrative instructions including a policy that allowed ease of access to international flights, removing visa requirements for foreign aid workers and exemption from customs taxes for relief supplies [18].

Immediately after access into Aceh was granted on 28 December 2004, the international humanitarian mission response came from 130 countries including 16 000 foreign military personnel from various countries [17]. However, the massive influx of assistance burdened the already weak local infrastructure. Relief workers also made huge demands on existing resources and there did not seem to be anyone in charge [18].

As there were no restrictions on the type and amount of assistance that could be brought into Indonesia, there was an oversupply of some military assets, while a variety of humanitarian aid agencies responded to the health sector needs, of which many of the volunteer personnel involved were not experienced in either working in Aceh or in carrying out humanitarian activities, thus created the problem of coordination of all of these volunteer personnel [18].

Among the international aid agencies which arrived in Aceh, only a few had any experience of working there which made the relief response inefficient [19]. Moreover, international agencies and local communities experienced a general breakdown of communication. As a result, not only were the local leaders felt taken aback by new obligations and responsibilities in managing the tsunami aftermath, they were also unable to perform their duties because their involvement in the planning of aid programmes was limited [19].

A detailed account of the situation in Aceh after the tsunami event was recorded by Zoraster (2006), a volunteer emergency physician of a local tertiary hospital, who the physician had participated in hospital

and health sector meetings for a duration of three weeks in January 2005 [20].

According to his report, the World Health Organization, with the Ministry of Health coordinated and managed the health sector through a biweekly health sector meeting at the Provincial Health Offices, followed by weekly hospital “Coordination Meeting” at the same facility, but unfortunately, these meetings were ineffective and inefficient. Zoraster stated that the attendees were not screened nor accounted for and important providers who did not attend the meetings were not acknowledged nor pursued, the roster of tasks was voluntary and not checked for adherence [20].

The discussions in the meetings were often based on guesswork as available data lacked accurate detail about the capabilities and competence of workers [20]. Zoraster also noted that leaders who did attend the meetings were reluctant to admit to inadequacies and problems and often were not able to disseminate information to the healthcare providers because of their busy schedule attending numerous meetings [20].

Case Study 2: Fukushima Nuclear Disaster, 2011

On March 11, 2011, the Tōhoku earthquake of 9.0 on the Richter scale and tsunami hit north-eastern Japan. This two-fold event initiated a severe nuclear accident at the Fukushima Daiichi nuclear plant. On sensing the earthquake, fission reactions in the active reactors automatically shut down and subsequently the electricity supply failed. The emergency diesel generators took over to power the pumps that circulated coolant through the reactors' cores [21]. However; the tsunami swept over the plant's seawall destroyed these generators [22]. The absence of coolants led to nuclear meltdowns, hydrogen explosions and the release of radioactive material between 12 and 15 March 2011.

According to Kushida (2014) in his paper which paper closely examined the crisis as it unfolded, at 3:00pm on 11 March, Fukushima Daiichi plant manager declared an impending nuclear emergency, followed by another warning of a “nuclear emergency in progress” at 4:30 p.m, which warranted evacuation of the affected area. But the evacuation did not occur [23]. Instead, Kushida reported that a statement that the nuclear reactors had shut down active operations was issued by the Prime Minister and that there was no

observed radiation leakage. A nuclear emergency was not declared. It was only after several hours did the Prime Minister declare a nuclear emergency but then there was still no evacuation order [23]. In fact, an hour after the declaration of nuclear emergency, the Chief Cabinet Secretary advised the public to stay calm, remain indoors and wait for the next announcement [23,24]. However, disregarding the order, at 8.50 pm the local authority issued an evacuation order for people within 2 kilometres of the plant. A half-hour later, the Prime Minister extended the evacuation distance to 3 km, not 2 kilometres radius as announced earlier [23,24].

On the following day, an explosion occurred in one of the reactors which caused destruction to its roof. The government reportedly took three hours to acknowledge the event and to order expansion of the evacuation radius to 20 kilometres. Although the incident was due to a process called "core meltdown" in the reactor, officials were instructed not to use the phrase at press conferences. The government's seemingly excessive vigilance about not causing panic unfortunately weakened its credibility [23, 25].

The ongoing crisis seemed to be escalating. On the evening of 15 March, a team of three local experts on nuclear plants and radiation measurement was instructed to assist in managing the crisis. The team immediately advised the government to use the computer simulation system called the System for Prediction of Environmental Emergency Dose Information [SPEEDI], to predict dispersions of radioactive substances and help people evacuate to safe areas [26].

Despite this advice, it was claimed that the SPEEDI data were not officially provided to top leaders in the Prime Minister's Office [27, 28]. The National Diet's report describes that "as the situation deteriorated and the planned government accident response systems failed to function, control of the emergency response was taken by the Prime Minister at the center of an ad hoc group of politicians, advisors and the chairman of the Nuclear and Industrial Safety Agency" [29]. It turned out, unfortunately, that the team of experts was allegedly incapable of contributing useful guidance to the top management in decision-making processes. Adding to the already stressful situation was that despite

the inadequacy of information, the Prime Minister maintained his role as the decision-maker and no one in his circle queried his decisions, offered other alternatives or acted individually. It was said that the "mindset of obedience to authority" hindered the open sharing of ideas and information [29]. In fact, the Prime Minister visited the Fukushima Daiichi plant on March 12 to learn more about the events at the disaster sites. That visit though, was described as "disrupted the chain of command and brought disorder to an already dire situation at the site" [29].

As the days passed, at each stage of the crisis the experts would suggest to the Prime Minister varying estimates of the evacuation radius, and the Prime Minister would take the safest option and make announcements to the public. As the estimates changed, the Prime Minister also changed his announcements. Unfortunately, this emphasis on safety and truthfulness led to growing fear and mistrust among the people. They accused the government of underestimating and playing down the seriousness of the situation [29]. This confusion projected the sense that the government was either suppressing crucial information, or worse, incompetent of understanding or dealing with the situation [23].

Press conferences were equally confusing. Early press conferences were conducted by high-ranking government officials and not by nuclear specialists. These officers were often unable to respond to journalists' questions, giving the public the strong sense that the government was either oblivious of exactly what was happening or concealing critical information [23]. Moreover, the word "meltdown" was replaced with "damage to the outer casings of the fuel rods," raising suspicion that the leadership was downplaying the disaster [23].

Kushida (2014) in his paper also stated that to make matters worse, much of the initial delay in informing the public and arranging evacuations were simply because information was not reaching the top leadership, plus existing organizations and procedures were entirely inadequate to deal with the situation [23]. According to Kushida, after the earthquake the Prime Minister immediately proceeded to the Emergency Operations Center in Prime Minister's Office basement, the designated base of operations during a national

disaster or crisis. However, Kushida reported that communications with centre was problematic because the room did not receive cellular signals and only having emergency fax and telephone lines [23]. Moreover, some political colleagues were not preregistered in the biometric security system and could not get in [27]. At one time, the Prime Minister moved out of the Emergency Operations Centre and worked from his own office on the fifth floor instead.

Unfortunately, while the office room received cellular signals, official emergency communications were still routed to the basement operations headquarters. To make matters worse, the lack of clarity of roles and responsibilities within the onsite emergency response center and between the onsite and headquarters emergency response centers may have contributed to response delays [30].

DISCUSSION

The Aceh Tsunami

Following the tsunami, a lack of coordination was expected. It was understandably difficult for any of the rescue personnel and leaders to gain a complete picture of what were needed. The local government was debilitated, so the central government took some time to respond to such a massive disaster. Further, the sudden arrival of humanitarian aid volunteers into Aceh led to disarray in the distribution of aids.

Nonetheless, considering the magnitude of the disaster and the martial administrative context, on the macro level the management of the Aceh disaster was relatively good under the government's leadership. In the case of Aceh, the flexibility in decision-making process among the top management was evident when the president deployed the army to the affected sites to perform humanitarian activities despite the areas being under rebel control.

The flexibility in leadership was also noted when the president requested assistance from the United Nations in managing the initial post-tsunami period; and in giving free access to anyone or any entity who wished to provide aid to the grief-stricken Aceh. The government's act of appointing the United Nations to act as a credible neutral broker aid on behalf of

Indonesia was vital, as it was awkward for the government to refuse offers from other countries [18].

However, at the micro-level, there were reports on the leadership incompetency of managers. In the Indonesia Country Report on the Aceh Tsunami, the Indonesian national government could not effectively address the immediate relief needs in Aceh due to the region's remoteness, severely reduced capacity of the local government and the extent of the disaster. The lack of formal and competent leadership also resulted in poor coordination of tasks and inefficient use and distribution of resources [19].

The Fukushima Nuclear Disaster

Prime Minister's administration was criticized for procrastination in informing about the development of a nuclear emergency, and in ordering an evacuation. He was also criticized as downplaying the severity of the situation. The major ineffectiveness of leadership in the Fukushima disaster revolved around poor communication. Severe compromise of bottom-up communications were also a result of earthquake damage and insufficient emergency planning procedures.

The initial communication problem was when there was the delay in acknowledging and announcing to the nation of a nuclear disaster which may have been contributed by the mistrust of available data. Then there was the preference of not using the word "meltdown" which could have been better at describing the real situation. Crisis communication was also not executed well, which resulted in the perceived incompetence of the leaders. For example, during the announcements of official evacuation zone made by the Prime Minister, the announcements should have been accompanied by as subsequent explanation on the rationale of the change in the zones.

The public should have been provided with the information which instigated the decisions, including other options or circumstances that were contemplated during the meetings. This would enable the Prime Minister to preserve his position of power but also emphasise that there would be changes to his decisions subject to the situation at hand [28].

Subsequently, legal actions were taken against the top management of the company which operated the Fukushima Daiichi nuclear power plant. Prosecutors had accused the top management of failing to act on information that showed the plant was at risk, and of causing deaths. Nevertheless, on 19 September 2019 the top management of the company was acquitted by the court. The ruling stated that it was implausible for the company's leaders to prepare for all tsunami scenarios, and that the executives' actions had been in line with government safety guidelines [30].

Challenges and Recommendations

Ideally, in disaster management leaders carry out leadership roles of coordinating activities that reduce vulnerability, limit the loss of life and property, protect the environment, and improve multi-organizational coordination. Disaster survivors seek safety and hope of things getting better from reliable information; and they want the duration of suffering shortened.

However, as evidenced in these two cases, it is often difficult for leaders to execute their roles in disaster situations. In disaster situations, many of the designated local leaders and health care workers needed for the search and rescue are also affected by the disaster, which often make the management of the disaster slower and less efficient than it should be.

Logistic disruptions such as the road network and transportation are another challenge that caused delay and disruption in the provision of assistance to the victims. Additionally, despite substantial technological advances in communication in recent years, problems such as system failure, system overload and incompatibility between communication systems used by different agencies persist.

Two aspects that can be improved in disaster management in these case study examples are effective communication and coordinating resources at all levels. These can be resolved by developing an effective response management capability. This effective management should start with preparation for anticipated impending disasters and having adequate support and funding to address any systemic failures in disaster response management. It is crucial for all parties such as the central government, local

governments, public and private corporations, and even residents of the area to understand their roles and work these out appropriately.

Appropriate decision-making style is crucial for an effective leader. The decision-making style should be flexible. Sometimes, even a mixed-style approach is more effective in disaster situation. Knowledge on leadership roles, skills and competencies need to be learned and enhanced by the leader; along with knowledge on the stages and management of disaster. This should be done regularly with testing of the whole system to ensure everyone is equipped with proper knowledge on their roles, skills and competencies. Thus, training on leadership in disaster management is crucial [31,32].

CONCLUSION

In conclusion, what leaders should do in disaster management, that is the theory; and what leaders have done in managing real disasters which is the reality, are often not the same. The leadership challenges during disaster events are abundant and can only be overcome by effective communication and coordinating resources at all levels. What is the ultimate lesson for leaders, especially the young and inexperienced, in managing a disaster? Managing a disaster is as simple to state, but it is as difficult to implement.

Conflict of Interest

Authors declare none

Authors Contribution

Author 1 was involved in the first draft of the manuscript, the discussion and proofreading of the whole manuscript. Author 2 and 3 reviewed the literature and extracted the required data.

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