2010 Chile Earthquake Disaster Management Case Study

Posted on October 11, 2019

Abstract

The paper reviews the disaster cycle, management models, and the role of government in the 2010 Chile earthquake. First, the paper highlights the basic steps of the disaster cycle. Chile mitigated the effect of the earthquake using a “preparedness culture” approach. This technique is based on the dreadful earthquake that occurred in 1960. However, Chile was inadequately prepared for the 2010 disaster. The parties involved in the response are the national government, the Chilean Red Cross, and the community. In recovery, there were three major tasks assigned to the emergency team by the President. The first responsibility was the provision of basic needs like sanitation, power, and food for a month. The second task was to make sure every individual had a shelter since winter was only four months ahead, and the emergency committee was to find a concise solution for the restoration of basic service, demolition, debris removal, and housing. Secondly, a centralized model was used during the 2010 Chile earthquake. Finally, the paper has illustrated the capacity and logistics used during the disaster. The main logistic objective was restoring infrastructure that would mediate response and recovery activities. The Chilean government had the capacity to deal with the disaster since there were available agencies such as ONEMI (U.S. Geological Survey, 2010).

Introduction

Chile is located on the Pacific Ring of Fire, which makes it vulnerable to earthquakes. Chile experienced the sixth-strongest earthquake in world history in 2010. The energy realized during the earthquake was 500 more than that of Haiti. However, the lives lost during the 2010 earthquake were less compared to that of Haiti. More than 500 individuals lost their lives. Chile’s compliance with the building codes and early warning were among the factors that reduced death tolls during the disaster. Moreover, over a million people were evacuated since the country had early detection mechanisms and the local individuals had prepared for the disaster. The Ministry of Health played a major role in rescuing the victims. The paper aims to present approaches used in Chile during the 2010 earthquake to reestablish the normal process in the affected places. The essay will revolve around the disaster cycle used, the logistics, the capacity, and the management model used during the disaster.

Disaster Cycle Used In Chile 2010 Earthquake

Preparedness: Chile's preparation for the effect of the earthquake that occurred in February 2010 was inadequate, according to the opinion expressed by the Emergency Management team. The opinion came from the disaster survivors, the Chilean Red Cross, and national and local personnel. The existing plans and communication system failed after the earthquake; therefore, ONEMI was unable to reach the areas affected by the earthquake. Inadequate funding and the absence of a similar disaster for more than 20 years contributed to inadequate preparedness, according to ONEMI. There was also a misconception that Chile was capable of surviving any outcome related to an earthquake since the country had already endured a major earthquake in 1960, which also contributed to inadequate preparedness. The fire department encountered two challenges when trying to execute its response to rescue the earthquake victims. First, the on-duty fire crew from Concepción prioritized rescuing their families before engaging in the supposed duties. Second, a muster point was inaccessible despite being a designated location for equipment and fire crews; thus, there was more confusion among the responders since there was no alternative place. However, the preparedness among the locals was efficient. For instance, Talca Regional Emergency Management showed how residents of the coastal line practised evacuation protocol every month. Those activities enabled the coastal communities to successfully evacuate during the tsunami.

Recovery: The president assigned three major tasks to the emergency team. The first task was to provide basic needs like sanitation, power, and food for a month. The second task was to make sure every individual had a shelter since winter was only four months ahead. Finally, the emergency committee was to find a concise solution for the restoration of basic service, demolition, debris removal, and housing. The progression of the three tasks occurred as designed according to the report. Before the end of the month, most utilities were already functioning. For example, within a week, some parts of Talca City had some water services. However, approximately 10 per cent of Talca City did not have water services as of July 2010. Moreover, approximately 65,000 Medias Aguas were built by the government prior to the tsunami and earthquake. The assembling of the Medias Aguas was done by the survivors, volunteer agencies, and the army after the wooden components were ferried to the impacted areas. The land close to the destroyed or damaged home was the most preferred location for the wooden component structure. Also, Aldeas (villages) were the location for the structures. The most affected people were the inhabitants of the Aldeas. During the construction of the camps, communal showers and toilets were installed. The installation of the electricity occurred at a later stage. Reports from individuals residing outside Constitución suggest that they received electricity in May. However, the camps and buildings were for temporary shelter.

The Aldeas land was protected from private and public sources. An adjacent sawmill land was used to construct shelters for Aldea people. Villages also acquired the land from the Chilean Navy. The land was located near Tumbes. Many programs have been developed for long-term housing. First, an $800 grant was offered to individuals who were less affected by the tsunami. The grant was meant to repair damaged houses. More than 50,000 homes were restored during this program. Ultimately, the victims

who had no homes were given $25,000-30,000 to build new homesteads. Communities around the tsunami-prone areas benefited from a redesign program implemented by the Ministry of Housing. The government opts to utilize the land for other activities, such as the creation of parks, apart from being a residential place, through close consultation between engineers, planners, and architects. The local communities were given the chance to choose a preferred prototype before the construction started.

The Chilean government has put the appropriate measures in place to improve emergency response following the occurrence of the earthquake calamity. After the disaster, the process and structures of intra-agency are being updated as suggested by a report from the ONEMI personnel. Furthermore, strengthening internal planning and new legislation are the improvements that will be implemented, according to the Director of ONEMI. On the other hand, lessons from the earthquake were utilized by the Chilean Red Cross to enhance their capability in the future. The relationship between the ONEMI and the Chilean Red Cross has increased due to the event. Lastly, the responsibilities of the ONEMI agency have increased after the new president suggested new legislation.

Earthquake's Impact: Good Governance Matters

There was a limited death toll in Chile's 2010 earthquake due to good governance. In particular, the control of corruption and government effectiveness are two outstanding governance dimensions. Good governance has enabled the country to construct buildings that are capable of withstanding seismic waves. Additionally, various technologies are adopted to periodically upgrade the building to minimize deaths in case the same event occurs.

Good governance has also given the media the freedom to update the public about their safety. For example, after the earthquake, the public was notified about the inhabitable apartments like the one near Santiago and the other one that collapsed in Concepción. During the earthquake, those buildings that were constructed a long time ago were damaged. Since Chile has good governance, there were a few casualties of the earthquake compared to that of Japan since the number of buildings that collapsed was minimal. In fact, the tsunami was the major cause of death in Chile, not the buildings. Undoubtedly, there will be an improvement in building codes, and the assessment of the damages will provide a lesson to the government on how to prepare for the same event in future, although the existing system failed during the 2010 earthquake.

Logistics Used On The 2010 Chile Earthquake

Immediately after the earthquake, the entire communication system in Chile was interrupted. Within 24 hours of the disaster, hospitals were operating independently, and some Chileans were not aware of the situation. Therefore, there was a need for a logistic plan to evacuate the victims and minimize the deaths as a result of the disaster. The first step focused on improving communication and situational awareness, which started at the local level before expanding to the regional and federal

levels. The task of situational awareness was in the hands of the central Ministry of Health. The representatives were sent the following day after the earthquake by the Ministry of Health. However, situational awareness in some regions was insufficient within ten days despite the Ministry of Health's efforts. The federal ministry based in Santiago received a request to avail necessary resources to the impacted area once the communications system was restored. Various issues like establishing the field hospital, patient transfer, and facilitating dialysis were resolved using the resources disbursed by the federal offices.

The Chilean government had an appropriate mechanism that facilitated power restoration within a week. Also, repatriation of the patients who were evacuated from a hospital without necessary facilities was done within 24 hours. Local emergency services and the Pan American Health Organization provided the generator that supplied power to hospitals. Power companies prioritized hospitals in the power restoration program due to coordination between responders and the Ministry of Health of Chile. After the earthquake, southern regions of Chile experienced difficulties in communication.

For instance, it was difficult for the central government to communicate with the impacted people in the south of Chile. Hence, the government distributed hand-held emergency radios to necessitate communication. Location and modality determined the time needed to restore power in the various regions. Text messaging in Concepción was available within 24 hours, and services such as internet and cell calls resumed within a week. The functionality of the Ministry of Health was inconsistent despite the availability of the radio communication system. Talcahuano and Concepción were contacted by the Ministry of Health within two days to facilitate rescue protocols. In the long run, videoconferencing was used by the Ministry of Health to contact impacted zones.

References

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