

## Editorial Preface

# Preparedness and Response for Future Disasters With Increasing Intensity and Severity Under Climate Change

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After publishing the first issue of the first volume in July, there were significant disaster events which took place this year in U.S. One of the most destructive events was massive wildfires which destroyed a total of about 1.9 million acres, a record-breaking number in the history of the state (CalFire, 2018), more than 19,000 homes and businesses, and killed more than 83 individuals between October 8<sup>th</sup> - 31<sup>st</sup> in California (BUSTLE, 2018). Although enormous damage caused by the wildfires has delayed damage assessment, an estimated cost for clean-up alone could reach about \$3 billion with insurers paying about \$11 billion on damages (BUSTLE, 2018).

In addition, there were two major hurricane events during the 2018 hurricane season: hurricanes Florence and Michael hit the areas in the southeastern part of U.S. (NOAA, 2018). Hurricane Florence, which made landfall on September 14<sup>th</sup>, is regarded as a 1,000-year rain event. This storm caused damages in the Carolinas and Virginia with an estimated cost of \$22 billion and killed 50 people (Irfan, 2018). Hurricane Michael, a Category 4 storm, made landfall in the Florida Panhandle, resulting in a record of 43 deaths, on October 11, 2018 (Breslin, 2018). During the last few years, the severity and intensity of the hurricanes (e.g., Hurricane Harvey in 2017, Hurricane Florence in 2018) has reached a new level. The increasing severity and intensity could be explained by climate change, which has increased ocean temperatures and warm water, both of which are necessary to sustain a hurricane (Irfan, 2018).

The other significant event was the release of the Fourth National Climate Assessment Report, which was prepared by a team of 13 federal agencies and 1,000 volunteers and 300 leading scientists, which included results of assessing findings of over 6,000 unique references (US GCP, 2018). According to the report, there is no alternative to explain climate change, which is caused by human-induced activities such as green-house gas emissions. The findings of the report indicate the anticipation of a dramatic increase in temperature and sea level. The increase in temperature could heighten the possibilities of droughts and storms; it could increase temperature in ocean which could lead to increasing wind speeds in tropical storms; it could increase sea levels in places of higher elevations that were never been at risk in the past (USGS, 2018).

At this juncture, to effectively cope with the future disasters which are anticipated to have a new level of severity, intensity, and greater impacts (US GCP, 2018), it is necessary for all key stakeholders to pay sufficient attention to disaster preparedness and response. Preparedness is desirable for several

reasons, one of them is its financial benefits. According to the National Institute of Building Sciences, after looking at 23 years of federally-funded mitigation grants, every dollar spent in mitigation projects, such as elevating homes at risk of flooding, could save an average of six dollars in the future disaster costs (NIBS, 2018). To shed light on critical importance of disaster preparedness and response, this issue of *International Journal of Disaster Response and Emergency Management* covers five articles that focus on disaster preparedness and disaster response.

First, under the theme of disaster preparedness, Vick, Wilson, Fisher, and Roseamelia (2018) examine disaster preparedness at the community hospitals in the U.S. The authors look at hospitals as critical infrastructures which provide medical care in the event of disasters which they see as a very common event in today's society. Their perspective is in line with the commonly-shared goal of disaster and emergency management, which is to save lives and minimize negative impacts. In this relationship, the level of disaster preparedness at the hospitals positively relates to the success of saving lives of disaster victims during a disaster event. Noting the critical importance of the hospitals, the authors aim to investigate the current state of disaster preparedness by the community hospitals in the U.S. using a systematic literature review. Their findings revealed that there is a mixed level of disaster preparedness in the country's community hospitals. The authors identified a number of barriers for disaster preparedness, including unfunded emergency preparedness mandates, time limitations, competing priorities for resources, government requirements, and training for staff. Preparing for future disasters at the community hospitals requires money. The authors noted that a total of \$3.7 billion was spent for disaster preparedness at the country's community hospitals by Hospital Preparedness Program (HPP) in its first nine years. The authors suggest that effective resource allocation could only be achieved through participation of state and federal governments.

Another paper also focuses on disaster preparedness against wildfires. Provis (2018) explores how to assist in the preparation and mitigation efforts of homeowners whose location exposes them to the potential bush fire risk in Australia. The recent massive wildfire in California reminded us that preparedness is essential for all key stakeholders, including individuals, private, non-profit, and public organizations. It also reminded us that the severity, intensity, and impacts from a wildfire should never be underestimated. The author looks into difficulties of individual homeowners in retrofitting their own homes. The study's findings show that the role of government is vital in formulating and reinforcing policy to enhance preparedness against bush fires. The author generated four recommendations based on his findings. First, preparedness against bush fires must begin with collaboration and agreement amongst all levels of government, especially in fire prone states. Second, intervention strategies should be developed based on local knowledge obtained in consultation with the community. In other words, the author highlights the localization of intervention strategies to take geographical variation of problems and barriers into account. Third, the governments should integrate the local knowledge and research studies in order to formulate policies that enhance community resiliency against bush fires. Fourth, the author highlights the importance of long-term sustainability of the project which requires implementing various funding mechanisms.

The third article explores disaster response, which has become more challenging in recent years due to increasing intensity and severity of natural hazards. During the response and recovery periods, it is evident that the military, one of the key stakeholders in disaster response, plays an important role in helping disaster victims. For example, there were more than 31,000 National Guard troops that helped disaster victims by responding to the historic Hurricane Harvey in Texas in 2017 (FEMA, 2017). Similarly, there are other key stakeholders, including non-government organizations, private organizations, individual Samaritans, who play vital roles in responding to a disaster. More specifically, Kwon and Kim (2018) look into the potential issues and problems of collaboration between NGOs and the military personnel in responding to a disaster. In their perspective, the two organizations are different in rules of engagement: the military is process orientated and rule governed, whereas international NGOs value neutrality, impartiality, humanity, and independence. In other words, the two organizations share their common mission of saving lives and relieving human suffering, but also have different immediate objectives. The authors suspect that when the two coordinate in response to a disaster or humanitarian crisis, the value of international NGOs could possibly be

compromised. Finally, the authors propose a cooperative framework between NGOs and military that provides a roadmap. However, the authors highlight the critical importance of world leaders and global organizations to achieve this goal.

The fourth article emphasizes disaster response in the context of the Philippines. To effectively respond to disasters, concerted efforts from various key stakeholders are essential. Jovita, Mutiarin, and Nurmandi (2018) look into the aspects of the governance process that shape the outcomes of collaborative disaster management. The authors aim to conduct an empirical analysis of identifying drivers contributing to a successful government in the context of the Philippines. More specifically, the authors investigate the relationship between initial agreement, leadership, trust, and managing conflict with collaboration. Study findings reveal that initial agreement correlates with leadership, which correlates with trust, which also associates with planning, and managing conflict. Based on the findings, the authors shed light on the critical importance of the strong leadership abilities of the heads of various agencies. Their effectiveness could lead to successful collaboration among various agencies.

The last article focuses on both disaster preparedness and response in the context of Chile. From a political economy perspective, Sandoval (2018) adopts a “radical critique” approach which attempts to identify socio-economic and political factors which contribute to vulnerability and are determinants for disaster causation. While the “natural” aspect of disasters was mainly reported, “non-natural” aspects of disasters, which were preconditions of disaster causation, were often overlooked. The author, then, discusses the factors that contribute to preconditions of the disasters in the history in Chile. Understanding the preconditions contributing to vulnerability is helpful for disaster risk management. Reducing the disaster risk requires four phases of disaster management; preparedness, mitigation, response, and recovery. Ignoring any of the disaster management phases could produce future vulnerability to disasters. The author calls for attention to be directed toward understanding preconditions of disasters in Chile and effectively managing disaster risk.

Taken together, the papers contained in this issue reflect the importance of disaster preparedness and disaster response. The papers demonstrate that disaster preparedness is not a simple and straight forward process. It requires the careful allocation of scarce resources, leadership, effective policy, participation of key stakeholders, understanding of vulnerability, and consideration of each of the four phases of disaster management process. In addition, the papers also demonstrate that disaster response requires collaboration and harmony amongst key stakeholders who share common mission to save lives and reduce suffering after disasters, even though they have different values and methodologies.

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