

# Use of Social Media in Disaster Relief during the Kuantan (Malaysia) Flood

*Teaching Case*

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## Abstract

Natural disasters, particularly hydro-meteorological (climate-related) disasters such as droughts, tsunamis, hurricanes, typhoons and floods, have increased in prevalence and severity in recent decades. During these disasters, the most pressing relief needs are food, water, sanitation and shelter. While relief organizations are increasingly utilizing the power of social media for informational tools such as disaster response crisis mapping, social media-derived relief efforts initiated by the general public have also increased in popularity. Compared to relief organizations, which have greater access to resources, relief efforts initiated by the general public are typically less organized and more personal and exploratory in nature.

This teaching case provides a detailed examination of grassroots uses of social media aimed at soliciting disaster-related assistance. The case study describes three relief effort initiatives that solicited support for victims of the most recent Malaysian flood.

**Keywords:** Social media, disaster relief, teaching case

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## Introduction

The city of Kuantan, Malaysia, experienced the most severe flood in three decades in December of 2013. Although Kuantan residents are accustomed to flooding at the end of each year due to heavy rain flows caused by monsoon winds, flooding of this degree had not been anticipated, and residents and authorities of Kuantan and surrounding areas were unprepared. Food, water and other necessary supplies available at relief centers became insufficient when large numbers of evacuees arrived. A delay in the delivery of relief supplies from surrounding regions due to road closures due to flooding exacerbated the severity of the situation. As the entire country closely monitored the latest developments in the flooding situation via social media channels, questions arose as to how concerned citizens could offer their support to those affected by the floods.

On December 3, 2013, while having lunch with colleagues, Hezeri Samsuri, a 41-year-old veteran editor of the Malaysian version of BBC Worldwide Ltd.'s TopGear automotive magazine, was caught by surprise when he received an unexpected phone call from his elderly mother. In a trembling voice, his mother informed him that she was trapped in her house in Kuantan due to flash flooding. Employed and residing in Kuala Lumpur, the federal capital city of Malaysia, Hezeri was living 250 kilometers away from his hometown of Kuantan, where his 69-year-old mother had remained after Hezeri and his siblings moved to Kuala Lumpur for better career opportunities. In Kuantan, his mother lived in the small *kampung* (meaning "village" in Malay, the official language of Malaysia) of Taman Guru, where fewer than one hundred Malay families lived. Hezeri knew the flooding event was unusual because Taman Guru was higher in elevation than the surrounding residential areas and his mother's house had never been flooded since the family had first moved to the area 27 years ago. In severe distress, Hezeri called his anxious mother for updates every hour. He felt helpless because he was physically distant from his frantic mother, who was in immediate need of help.

Meanwhile, Kuantan's 55-year-old elected Member of Parliament, Fuziah Salleh, suspected that this disaster event differed from annual floods typical of Kuantan. She had received numerous phone calls for assistance and reports that relief center supplies were rapidly being depleted. Fuziah was concerned that sufficient relief resources would not be mobilized in time given the severity of this particular flood event.

Concurrently, Khir Ariffin, the founder and director of a company that specializes in the delivery of Information and Communications Technology (ICT) solutions and leadership training, felt sympathy for the flood victims after reading news on the worsening condition in Kuantan on a smartphone Facebook app. Although he was not living in Kuantan and did not come from the area, he harbored a strong desire to help the flood victims. The 40-year-old entrepreneur chose to use this opportunity to put his social media knowledge to practical use.

## Background

Malaysia is a Southeast Asian country that is characterized by an equatorial or tropical rainforest climate that is hot and humid throughout the year. Malaysia experiences two seasons annually, namely, the dry, hot season and the rainy season. During the dry, hot season, which extends from April to September, temperatures can reach as high as 40 degrees Celsius. When seasonal southwestern winds approach the Malaysian peninsula, they are blocked by the landmass of Sumatra, Indonesia, reducing Malaysian rainfall levels during this period. However, during the rainy season from October to March, northeastern winds moving across the South China Sea produce an extended period of heavy rainfall, particularly on the east coast of Peninsular Malaysia.

With an estimated 2010 population of 607,778 residents distributed over a land area of 2,960 km<sup>2</sup>, Kuantan is the largest city on the east coast of Peninsular Malaysia. Kuantan is the state capital of Pahang, the third largest state in Malaysia, and the city faces the South China Sea. The map in Figure 1 shows the location of Kuantan in Pahang, Malaysia, and Figure 2 illustrates the direction of monsoon winds. According to the Malaysian Meteorological Department, the highest rainfall levels for the east coastal area occur during the months of November, December and January. It is not uncommon for flooding to occur in Kuantan near the end of the year. In fact, annual flood-preparedness operations include equipping schools located in frequently flooded areas as flood relief centers stocked with food, water and blankets from November to January.



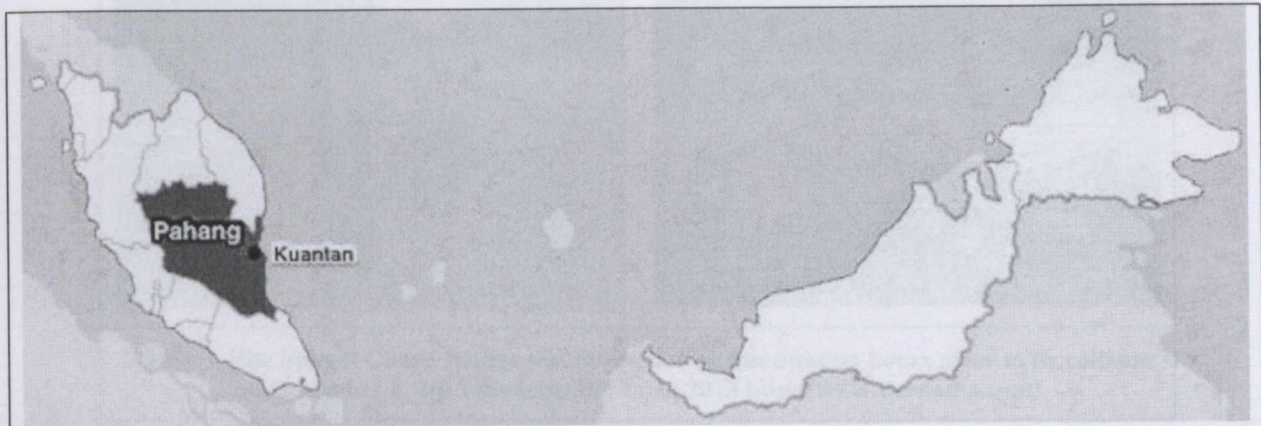


Figure 1. Location of Kuantan in the state of Pahang, Malaysia (Source: Wikimedia Commons 2014)

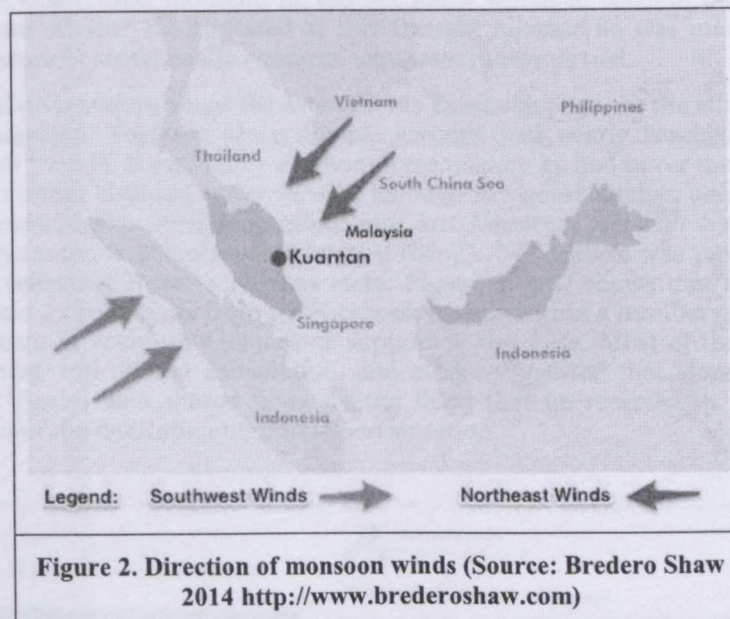


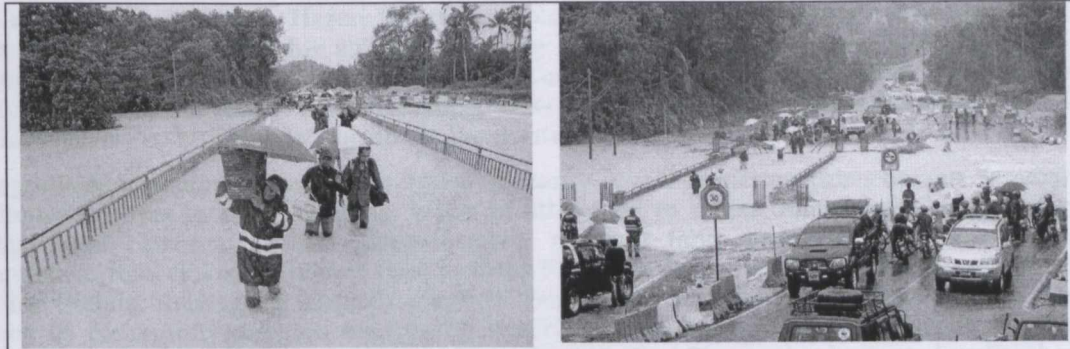
Figure 2. Direction of monsoon winds (Source: Bredero Shaw 2014 <http://www.brederoshaw.com>)

## The Flooding Event

In early December 2013, a heavy downpour that lasted two consecutive days caused severe flooding in several districts in the state of Pahang. The first communications on the floods on December 2, 2013, reported that 52 residents in four villages located 162 kilometers away from Kuantan had been evacuated to flood relief centers after floods had struck the state of Pahang at 10 AM that day. It was later reported that the Sungai Charu Bridge had collapsed at approximately 4 PM that day, blocking the main route connecting a 500-resident town to Kuantan. Figure 3 shows that the Sungai Charu Bridge was inundated by a half meter of water. The bridge was closed to all traffic several hours prior to its collapse.

By December 3<sup>rd</sup>, severe flooding in Kuantan had paralyzed the city, with most major roads impassable and inundated with water exceeding depths of one meter. A spokesman at the Pahang police headquarters commented that 23 Kuantan *kampungs* had been affected by the floods and that 1,824 victims had been evacuated to 23 relief centers.

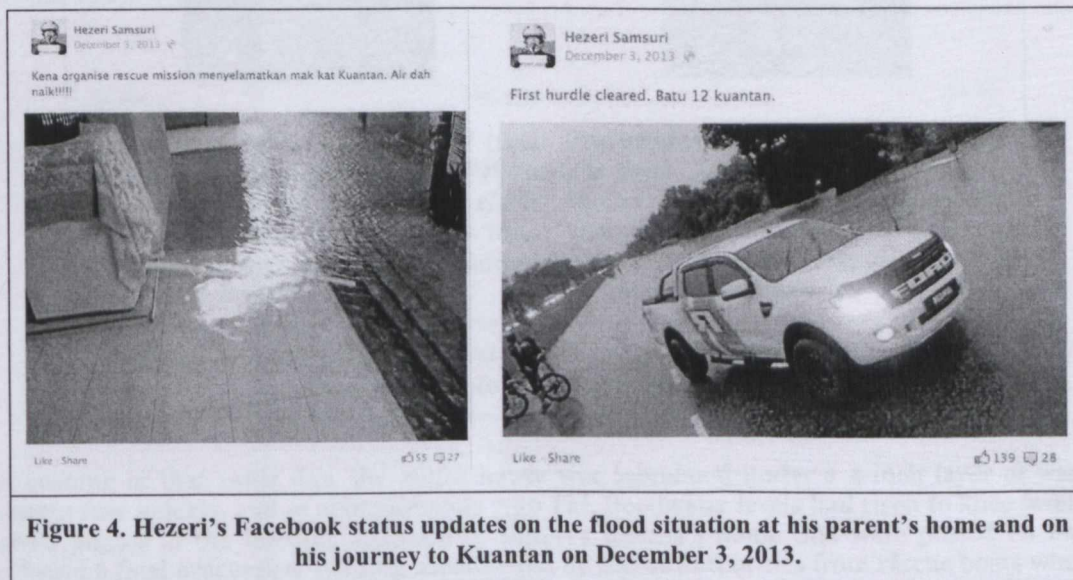




**Figure 3. The Sungai Charu Bridge was inundated by floodwaters hours prior to its collapse on December 2, 2013 (Source: Bernama 2013 <http://www.bernama.com>)**

After Hezeri received the call from his mother about the flooding situation at her house, he was not sure how he could help from a long distance. Although he realized that he needed both practical advice and emotional support at this critical moment, he did not know whom to consult. Should he turn to social media for support and advice? He hesitated at this thought because he was unsure if he could solicit support from his network of social media contacts, who were purely virtual.

Eventually, he posted information about the event on his Facebook page. As the editor of a highly popular local automotive magazine, TopGear Malaysia, his account had nearly reached Facebook's personal account limit of 5,000 friends, the majority of whom were readers he had never met in person. He posted photos taken by his mother showing water flowing through her home kitchen and included the caption, "*Kena organise rescue mission menyelamatkan mak kat Kuantan, Air dah naik*" (Need to organize rescue mission to save mom in Kuantan, floodwaters rising). The caption was punctuated with multiple exclamation marks, reflecting Hezeri's anxious state. Figure 4 (left) shows that the status update post attracted 55 "likes" and 27 comments from his Facebook friends within a number of hours. "Likes" can be interpreted as a gesture of acknowledgement or support in this case. Most of the comments that were posted were comforting and offered consolation, and others suggested that Hezeri drive his new Ford Ranger to Kuantan. Hezeri also shared news on the flood that he received to keep his social media network informed about the development of the flood situation.



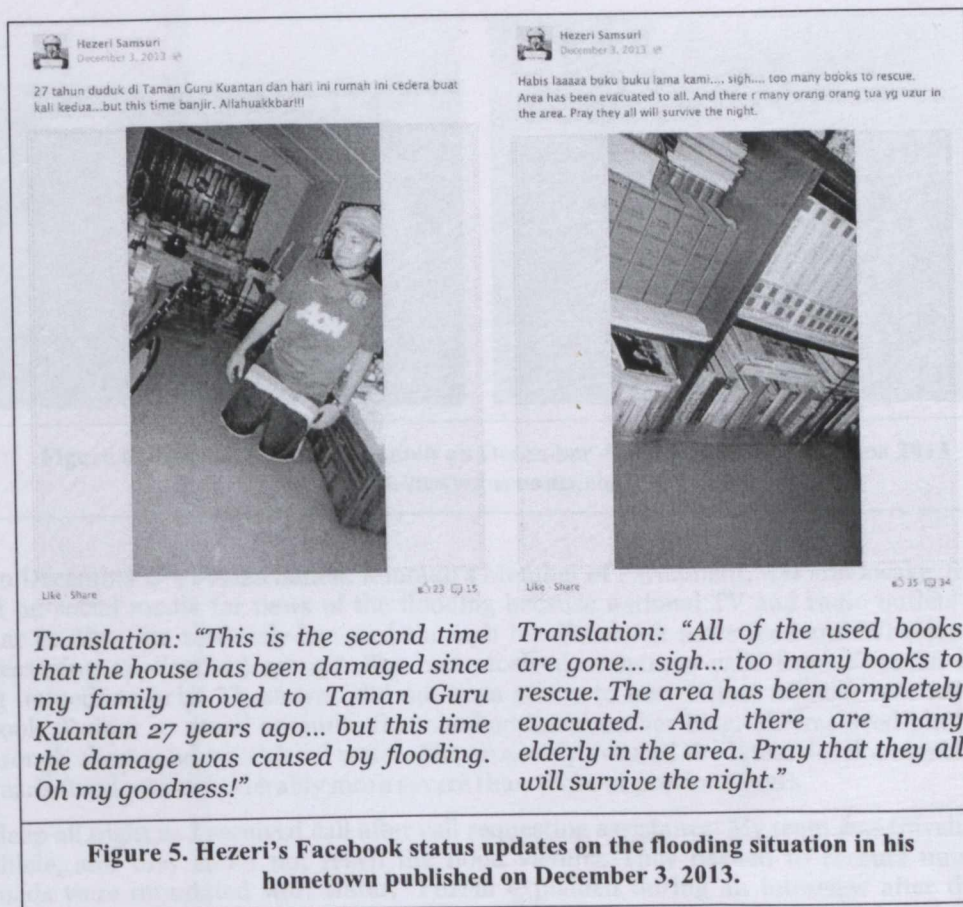
**Figure 4. Hezeri's Facebook status updates on the flood situation at his parent's home and on his journey to Kuantan on December 3, 2013.**



As the eldest of four siblings, Hezeri felt responsible for ensuring his mother's threatened well-being. After a brief discussion with his siblings via video call, he decided to travel to his mother's home. Motivated by ardent support from his siblings and online friends but apprehensive about tackling this extraordinary situation, Hezeri took emergency leave and drove to Kuantan in his white Ford Ranger, which later proved to be indispensable in the floodwaters.

Upon approaching Kuantan, Hezeri was forced to change course numerous times because familiar routes were impassable due to heavy flooding. While he attempted to access official websites for information regarding road closures, to his disappointment, none of these websites were providing current information on road closures. He then tried to check Facebook for any road closure information shared by his online friends. Relying on frequent unofficial but largely accurate road closure updates posted on Facebook by community-oriented road users, Hezeri successfully avoided flooded routes and reached Kuantan. Figure 4 (right) presents a photo of Hezeri's white Ford Ranger that he posted on Facebook after passing through a moderately flooded road heading toward Kuantan.

Upon reaching his mother's house in Kuantan in the late afternoon, Hezeri moved all electrical appliances, such as the refrigerator, television, computer and washing machine, to a higher area. He also sealed all legal paper documents and small electrical devices, such as cameras and mobile phones, in a waterproof duffel bag that he had purchased several years prior for jungle camping excursions.



By the evening of that same day, the entire house was inundated under a 5-inch layer of water. The floodwaters rose quickly, and at approximately 7:30 PM, floodwater levels had risen to knee level. Figure 5 presents photos of the flooding situation at Hezeri's mother's home that were posted on Facebook. Hezeri heard a final evacuation warning broadcasted by rescue authorities from rescue boats when water levels had reached waist height. Hezeri then evacuated the house with his mother and drove to his



cousin's house, which had not been affected by the Kuantan flood. Hezeri and his mother hardly slept that night because they were concerned that the flooding would not subside. They hoped that the rain would stop and that assistance would be made available. Hezeri travelled back to Kuala Lumpur the following day after the floodwaters had receded slightly because he needed to return to his wife and children and attend important work meetings.

## Worsening Conditions

Heavy rains continued to fall the following day, worsening flooding conditions in Kuantan. Access to water and electricity had been disconnected in most areas of Kuantan. The national electricity provider reported on its official Facebook page later that same day that the blackout was attributable to rising water levels at 1,072 substations. The company also stated that access to electricity would be restored after the floodwaters had receded. Most commercial and financial institutions in Kuantan were closed due to power outages. Figure 6 shows that the Kuantan city area was flooded and that roads in and around downtown Kuantan were impassable. Floodwaters were reported to have reached a depth of two meters in suburban areas and villages surrounding Kuantan. The number of evacuees at 33 relief centers increased to 4,148. Residents of low-lying areas around Kuantan were directed to prepare for evacuation due to continued rain and the anticipated development of a rip tide at the mouth of the Kuantan River overnight.

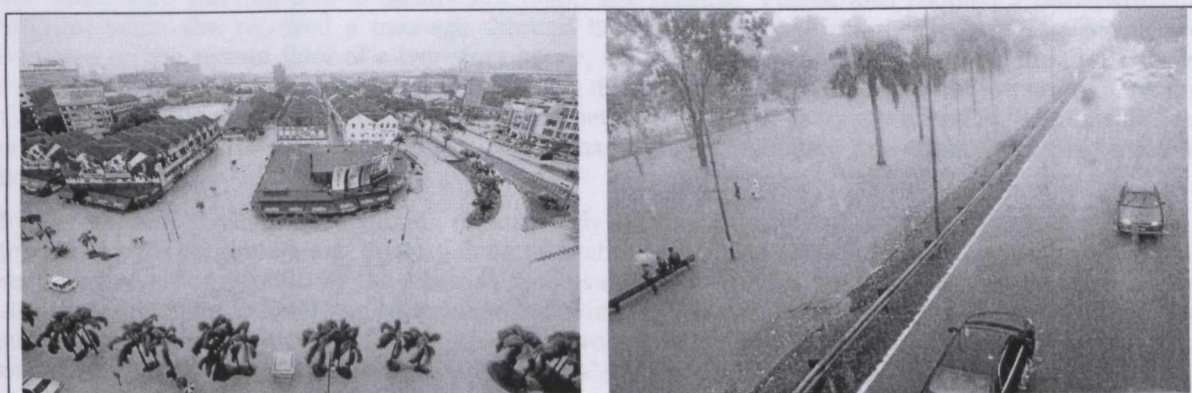


Figure 6. Flooded areas of Kuantan on December 4, 2013 (Source: Bernama 2013 <http://www.bernama.com>).

At 3 AM on December 4<sup>th</sup>, Fuziah Salleh, Kuantan's Member of Parliament, was still awake. She was solely dependent on social media for news of the flooding because national TV and radio outlets had stopped reporting at 12 AM. She restlessly browsed through her Facebook news feed and Whatsapp (a popular instant messaging application) groups. She had received numerous calls from Kuantan flood victims requesting immediate help. Those who did not have access to her contact number reached her through her Facebook, Twitter or email accounts that she had listed on her blog. She received photos of victims wading through chest- and waist-level water. She anxiously awaited the latest developments and worried that this year's flood was considerably more severe than those of previous years.

"I didn't sleep all night as I received call after call requesting assistance. My team was traveling via an all-terrain-vehicle, and they could not reach the flood victims. They needed to reroute numerous times because roads were inundated with water," Fuziah explained during an interview after the flood. She continued, "At 4 AM, when my team finally reached the site, there was no food, and there was no milk for the babies; there was no electricity available for residents to charge their phones." She added that her team distributed only biscuits to the needy, as all of the shops were closed due to flooding.

Re-elected as Kuantan's Member of Parliament during Malaysia's general election in May of 2013, Fuziah had served as the elected representative of Kuantan residents since 2008. Although she grew up in Kuantan, she was residing in Kuala Lumpur with her family when the flooding occurred. She was highly



concerned when she received word from her Kuantan office that few resources for evacuating flood victims in her constituency were available. In addition, food and water supplies at the relief centers grew scarcer as the number of evacuees increased. She was particularly vexed that a small number of relief centers in secondary schools sheltered thousands of evacuees. These flood relief centers had been designed to accommodate a maximum of 500 individuals and thus could not adequately serve all of the evacuees. Furthermore, assistance could not reach these centers in time because several areas had become inaccessible. In some areas, even three-ton trucks could not pass through flooded main roads to deliver aid. Based on this information, Fuziah realized that this particular flooding event differed from those typically experienced in Kuantan. She wished to travel to Kuantan immediately to help her team assist victims and tackle numerous urgent issues.

## **Disaster Response**

The next day, Fuziah left Kuala Lumpur for Kuantan immediately after attending the morning parliamentary sitting. Upon reaching a flood relief center in the most heavily affected area of Sungai Isap, she discovered what she later described as a "horrible" situation. The relief center was crowded with 4,000 evacuees. "People were cold and had to sleep on hard cement floors for days because there were not enough blankets. Babies were crying because they had no access to milk or diapers. Mothers in confinement and the elderly did not have appropriate care. Sick people did not have access to medicine, and most were starving due to insufficient food," she recalled. Fuziah also recalled a heart-wrenching moment when she received a message through her Facebook page calling for help: 40 people were stranded on the second floor of a two-story house, and they could not escape because the first floor was already submerged under water. She immediately dispatched her team to evacuate the group. One flood victim wept while sharing her experience with others: "I could not carry my husband, who has difficulty walking, so we had to wade through a flooded road for approximately one kilometer until we found a boat."

By December 5<sup>th</sup>, it had been raining continuously for five days. Flooding conditions had worsened as torrential rains continued, and existing flood mitigation systems in Kuantan were not equipped to address such high levels of rainfall. By the morning, floodwaters had reached the roofs of most traditional single-story village houses in low-lying *kampungs*, including Paya Besar and Sungai Isap. Several residents were surprised by the rapid increase in water levels overnight. Some residents were still wearing their pajamas as they evacuated their homes and reported to nearby flood relief centers. Helicopters airlifted elderly and stranded victims and transported them to evacuation centers.

Evacuees in relief centers consulted their Facebook and Whatsapp pages for breaking news on the flood. Most lamented that news on the flood provided by official television channels was typically delayed and lacking in detail compared to news provided through social media. The evacuees did, however, find that some news content posted on Facebook was either untrue or that photos posted on the website were of the previous year's flooding season. The evacuees quickly learned how to filter news provided by social media, and they trusted more popular Facebook groups and pages to a greater extent as they realized that some news content might not be accurate.

Flooding persisted for several days in low-lying areas. The floods had affected a large area, and water levels had risen too quickly. Main roads were inaccessible, and many evacuees were forced to leave quickly without their belongings. At this point, Fuziah decided to assume a more active role rather than waiting for central government assistance. She carefully contemplated her options as a government representative: should she request public assistance by distributing traditional print media statements? How much time would be needed to arrange a successful press conference to generate a print and television media presence? How could she quickly solicit assistance from a large group of concerned publics?

Having successfully promoted her political campaign through social media during the general election several months earlier to gain voter support, Fuziah chose to use social media outlets to mobilize support. Although she had not previously utilized social media tools for disaster relief purposes, she decided that it was the most effective option. She wondered how she should initiate this online campaign. How could she manage a social media campaign independently when her team was already fully occupied with on-the-



ground work? She then determined how she would construct her announcements to illustrate the seriousness of the situation and the pressing need for assistance.

Meanwhile, Hezeri despaired as he read of the worsening flood conditions and stranded flood victims in his Facebook news feed. "Evacuees at some of the relief centers had only rice with soy sauce to eat, and many evacuees, including the elderly, were forced to sleep on the floor." According to friends of his who were occupying relief centers, "assistance arrived late." Residing in Kuala Lumpur, Hezeri did not know how he could better address the situation. Despite harboring strong personal motivation to act, he questioned whether he could assist so many victims by himself.

Suddenly, he recalled reading a story in which netizens had successfully used social media tools to raise donations quickly and effectively after the 2011 national flood crisis in Thailand. Feeling inspired and motivated, he decided to start a similar initiative. However, he was unsure of the response he would receive because he had not personally met most of his social media followers and thus did not know how receptive and charitable they would be. He also wondered whether he was credible and reputable enough for his online virtual friends to trust him and support his call for help.

The rain finally stopped on December 6<sup>th</sup>, and the floodwaters receded in higher flood regions. By the evening, several thousand victims had left the relief centers for their homes. Affected families were devastated upon inspecting the extent of flood damage to their homes. The victims realized that there was much cleanup and repair work to do and that there was little food.

As a result of the 10-day flood, 40,000 people were relocated to evacuation centers, and three lives were lost. In addition, physical damage reportedly represented losses of RM7.3 million (USD2.2 million). Malaysian Prime Minister Najib Razak, during his opening speech at the annual general assembly of his political party, announced that RM500 (USD152) in cash would be allocated to each family affected by floods. The prime minister also appealed to banks to defer loan repayments for those affected by the floods. In addition, the state government allocated RM250 (USD76) in cash aid to each affected family. Deputy Prime Minister Muhyiddin Yassin also announced that the National Disaster Committee would implement a more effective Standard Operating Procedure (SOP) for addressing floods. He stated, "though we have made preparations in the past, weather pattern changes complicate the task of making predictions. Thus, a new SOP is needed."

## Aftermath

The number of victims occupying relief centers continued to decline as more families eagerly left for their homes, and the flood situation gradually improved. Most of the affected families were traumatized by the damages to their homes upon their initial return from the relief centers. Water level stains covered the walls, and building floors were covered in mud. Virtually all furniture and domestic appliances were damaged. Piles of debris accumulated outside of affected residential areas as residents cleared out their homes. Automobile mechanics in the district were busy repairing vehicles damaged by floodwaters.

Victims were in need of cleaning kits, dry foodstuffs, disposable diapers, sanitary pads, blankets, sarongs and *telekungs* (Muslim female prayer dresses) in the aftermath period. There was also high demand for volunteers to clean mud-filled houses and prepare food packages for victims over the weekend. One of the volunteers, Siti Nadia, recalled her volunteer experience: "I shed tears when I went into a wooden house by the river and saw that the house was severely damaged. The house was filled with thick mud and the resident looked helpless. Some of us helped clean the house while the rest of the volunteers delivered rice and clothes to the affected families."

Like Hezeri, active social media user Khir Ariffin from Kuala Lumpur also sympathized with the victims after reading about the plight of the flood victims on Facebook. He thus mobilized a team to help the victims. Upon calling his friends, he found that they were all eager to help. "They just needed someone to take the lead," Khir explained, "so when an idea was suggested, everyone else participated." He initiated a flood relief effort, delegated tasks to different groups according to their interests and then monitored relief actions as they progressed. The majority of the group's meetings and discussions were held through private Facebook and Whatsapp groups.

While this initiative was first organized offline between Khir and his friends, the group felt that they needed a larger relief group to serve more flood victims. Khir contemplated whether and how he could use



social media networks to recruit more volunteers or raise donations to support his relief mission. While he was eager to use his social media skills for this purpose, he understood that he would risk his reputation among his social media followers if he did not successfully execute the mission transparently and ethically.

## **Social Media for Disaster Relief**

Recent major natural disasters have witnessed a global increase in social media approaches to disaster relief. After the 2010 earthquake in Haiti, social media users shared their personal experiences, photos and videos on Twitter, Facebook, Youtube, Flickr and blogs. Social media users also donated USD\$8 million to the American Red Cross via text in less than 48 hours. Crowdsourced crisis mapping websites such as Ushahidi and Google Maps also helped local organizations identify communities in need of relief after the 2011 earthquake and tsunami in Japan and after the Christchurch earthquake in New Zealand in 2010. Social media tools were also used for disaster relief after the seven-month flooding event in Thailand in 2011, after Hurricane Sandy hit New York, Long Island and the New Jersey coast in 2012 and after the earthquake in Lushan, China, in 2013.

Two months after the end of the flood, Hezeri, Fuziah and Khir participated in a panel discussion as part of a post-flood seminar held by authorities that focused on future preparations for similar disasters. Upon reflecting on their relief missions, several interesting issues surrounding the use of social media tools for disaster relief emerged.

First, could these individuals have organized their relief missions as successfully without the help of social media tools? Did their long-term social media presence yield a more positive reception to their calls for mobilization? What distinguishing attributes of social media tools make them useful for disaster relief? Do these tools alienate individuals who do not have access to social media, as a large proportion of natural disaster victims are poor, technologically limited, and less educated? Second, because most social media followers have not met in person, and in light of the high prevalence of online fraud, how did the followers recognize the credibility and trustworthiness of these relief missions? How could social media relief efforts more transparently manage funds? Did these individuals damage their online relationships with followers by appealing for help? Finally, what key lessons have been learned from this particular case, and how may future initiatives be organized more effectively?

## **Teaching Note**

Educators may contact the first author of this teaching case via email to obtain a copy of the supplementary teaching note.

## **Acknowledgements**

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