

Case Study

Building Social Resilience after the 2014 Flood Disaster

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ABSTRACT

The 2014 flood disaster has brought physical destruction, damage as well as social disruption that caused normal life to become less stable. A state of social equilibrium needs to be restored through effective restoration solutions to normalise life after the disaster. This qualitative research aims to identify two main issues, namely social disruption and social resilience, by utilising a case study of the 2014 flood disaster in Hulu Dungun, Terengganu. A total of 15 victims were selected using the purposive sampling method based on a set of defined criteria—the data collection method comprised of in-depth interviews and non-participant observation. The data were analysed through thematic analysis techniques. The results showed that the disruption suffered by the victims included disruption of social roles, the uncertainty of employment, instability of social routine, and collective trauma. However, the availability of social resilience had enabled the victims to rebuild their lives after flood disasters and restore the ‘normal’ or ‘stable’ situations of

social equilibrium. The research is expected to contribute to environmental sociology that has yet to receive widespread attention from sociological researchers in Malaysia. This research is a meaningful effort towards promoting and increasing the environmental sociology study, which to date, remains disoriented.

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INTRODUCTION

Natural disasters are the manifestations of climate change that occur to the environment and humans and can cause floods, tsunamis, earthquakes, hurricanes, epidemics and other calamities. Malaysia is more vulnerable to flood nowadays due to the development activities that do not emphasise the environmental sensitivity aspects. Flood events have affected the lives of every individual involved as they destroyed their home, properties, and livelihoods (Isahak et al., 2018), and restrained them from pursuing normal social life as before. Destruction is broader than damage because it involves significant and financial loss (Palekiencè et al., 2014), as well as causing social disruption (Vollmer, 2013). Jurjanos and Seekamp (2018) claimed that ugliness and feelings towards the social environment are essential for community resilience. Neglecting these two can weaken a community's resilience to face any form of disaster. The world has recently been enmeshed in a significant epidemic that stretches to all walks of life. As we know through the efforts of all parties in handling and curbing the pandemic of Covid-19, the concerted efforts and social solidarity to an end are required to achieve two main objectives: to get the country back to normalcy or normalise the disruption.

Similarly, this research focused on normalising disruption in the little scope, flood disaster issues in 2014 on the East Coast of Peninsular Malaysia. In general, floods are a common natural phenomenon in Malaysia (Alias et al., 2021). Nevertheless,

the 2014 flood disaster has caused destruction and physical damage to the environment. That particular phenomenon caused losses of RM2.85 billion, killed 25 lives, and involved approximately 500,000 victims in Kelantan, Terengganu and Pahang. The number of victims involved is the highest compared to a series of flood disaster incidents in Malaysia from 1965 to 2014. In addition, 2014 marked as a year when East Coast Malaysia re-experience a big flood after about 43 years since 1971 (Elfithri et al., 2017). An estimated 300,000 residents in East Coast state, including Johor and Perak, were affected by the disaster. Moreover, 1500 residents have lost their homes, and the impact of damage and destruction of public assets reached up to RM200 million. The catastrophic event of the 2014 floods disaster has disrupted everyday life, caused chaos, and destroyed the social structures of at-risk communities, especially among the flood victims (Yusoff et al., 2018).

LITERATURE REVIEW

Disaster is a severe disruption to the functioning of a community or society that involves widespread loss and impact on the people at any scale, materials or environment losses beyond the ability of affected communities to overcome with their resources (Bănică et al., 2020). Two aspects of this definition are highlighted in this research. First, the emphasis of the definition is on a severe disruption. Thus, one can expect a catastrophic event to be something that significantly changes everyday life. It is an event that most affected communities

will feel as it removes them from ordinary life. Second, the differences are defined by the occurrence of extraordinary disasters. Thus, disaster is considered an event beyond the community's ability to deal with the consequences by using all their resources.

In order to know the concept of social disruption in the context of disaster, this research requires several interdisciplinary approaches. Social disruption is a concept used in sociology to discover the social changes, dysfunctions or disintegrations in a community (Vollmer, 2013). Disasters cause social disruption and impede the provision of resources necessary for community survival and well-being (Norris et al., 2009). Sources intended are food, shelter or housing, medical treatment, employment, social support and emotional support. Thus, a policy has been established in Malaysia around 1997 known as *Arahan No. 20: Dasar dan Mekanisme Pengurusan Bencana Negara* to manage disasters. Floods can cause physical damage and destruction, disrupt the social equilibrium from stable to unstable, as well as weaken the human element.

In relation to that, the process for normalising disruption from unstable to stable, or in the other words, to reinstate the life of victims as usual for at least before the occurrence of the flood disaster desperately required strenuous effort involving social support from all stakeholders. Disaster management is a process that requires individuals, groups and communities to manage or improve the risks, dangers and effects of disasters (Tan, 2013). Many

disruptions happen and draw little attention beyond people's situations, thus requiring practical efforts in building social resilience.

In the context of confronting disruptions as the nexus of social situations, when flood disaster occurs suddenly and unexpectedly, a less 'stable' situation arises and demands the social structure adjustment and social changes within the community. It is to ensure that the state of social equilibrium can be restored in a society that has been affected by the disasters, and restoring society's stability as usual. The social structure of society has been equipped with various social institutions that function to maintain their stability. According to Burnes (2009), in a social equilibrium, changes still happen but are relatively stable. In short, disaster is disruptive and requires different adjustments in terms of scale, scope and time.

Whilst the victims who lost their homes need financial support. They also need psychological support to reduce their trauma. The victims go through a chain of 'loss' when the disaster ripped their home, source of income and led to trauma that will further strengthen the crisis (McDermott & Cobham, 2012). Essentially, no matter how serious the injuries, losses or destructions in a disaster situation, the victims will feel stressed, worried and depressed. Their suffering may lead to emotional and psychosocial stress problems that can disrupt their resilience to rise again in building new lives after the flood. This situation can affect their well-being, safety and vulnerability. Meanwhile, significantly

increased social support is needed to address loss and trauma from disaster, lack of accessibility, disruption or damage after a disaster (Zakour, 2010).

According to Toland and Carrigan (2011), social resilience is an attitude of resilience and social protection against adverse events. Social resilience also refers to positive adjustment or maintaining social and mental stability despite difficulties in more stressful situations (Morton & Lurie, 2013). Generally, vulnerability refers to the inability to anticipate, cope with, prevent, and recover from the effects of disasters (Madhuri et al., 2014). Wood et al. (2010) stated that social vulnerability is context-dependent and often associated with the degree of exposure to extreme events and the preparedness and resilience of individuals and social groups. However, social vulnerability and social resilience represent a different point of time in the stage of the disaster.

Social vulnerability is descriptive of conditions before a disaster happen. These conditions are continually changing. Safe conditions can deteriorate, and unsafe conditions can be removed or managed. Social resilience refers to the response and recovery process after a disaster has happened. It is applied most directly to the recovery process because it entails a return to pre-disaster conditions or something better. It also helps social systems to prepare for disruptions, cope with and recover if they occur, and adapt to new context conditions. Social vulnerability also indicates a condition that makes

victims vulnerable to flood disasters. It requires them to be physically, socially and emotionally resilient to recover.

Although floods are a 'normal' phenomenon, this situation remains a public concern. The concern is basically because the flood disaster is an incident and situation not desired by all parties. The flood disaster causes physical damage and destruction, and disrupts social stability, and weakens the humanitarian element. Disasters also attempt to threaten survival, causing 'pain' in the form of emotional, physical, rational, and spiritual, and triggering conflict in all levels of the social systems of society (Schlehe, 2010). In addition, human is the victims of the most significant impact in the cycle of catastrophic events from beginning to end. The impact of the flood disaster on the physical aspects may be reversible. However, the effects are pervasive on human and humanitarian aspects.

MATERIALS AND METHODS

This research was conducted by qualitative methods using case study design through in-depth interview and non-participant observation techniques. Qualitative research using case study design is an in-depth exploratory study conducted on a limited system such as activities, events, processes or individuals based on extensive data collection (Creswell, 2014). Case studies are appropriate to answer questions about the 'how' and 'why' of a phenomenon being studied (Yin, 2014). A total of 15 victims facing the 2014 flood disaster were selected from three villages in Hulu Dungun, namely

Kampung Minda, Kampung Kuala Jengai, and Kampung Pasir Raja. The results were compiled through the practical experience of the victims, which was conducted in 2016.

Hulu Dungun is located in the Dungun district, an inland area called 'upstream' by the locals. It is also a flood-prone area. The rationale for selecting the three villages is because of the villages that were classified as the most vulnerable to danger, risk and flood disaster. Every year, the villages will be flooded every time the monsoon season arrives. During the 2014 flood disaster, almost 80% of Hulu Dungun was hit by floods caused by water overflow in Sungai Dungun. A total of five victims for each village through the purposive sampling method were selected to gather more in-depth information. The informants selected consisted of victims aged between 16 to 70 years, who were voluntary and comfortable sharing their experiences, appreciation, and empirical perceptions throughout the events.

In-depth interview and non-participant observation methods were selected in this research to obtain data and information. In most qualitative studies, the data will be collected through the interview method. The non-participant observation was conducted to enable researchers to observe the study area's situation, behaviour, and attitude. Data and information are analysed using thematic analysis methods to identify and report the pattern of a theme obtained (Liamputtong, 2010). Qualitative data and information were studied descriptively and then presented in the form of descriptions, charts, diagrams, and tables to facilitate the reporting activities of the findings.

RESULTS

The research found that the victims were encountered with disruption of social roles, the uncertainty of employment, instability of social routine, and collective trauma.

Disruption of Social Roles

The 2014 flood disaster caused the victims to face disruption of their social roles. The change in social roles encountered was due to the everyday life changed into less stable due to the disasters, affecting the victims in both genders. For example, a female was the gender group that received new daily role or responsibility changes after the disaster. A 26 years old victim stated that:

We as a woman have difficulties after the flood. We have to take care of our kids and help the family to reconstruct the ruined. We also have a problem supplying drinking water, and we have to walk a long way in rainy weather to fetch clean water. Not only that, we have to warm water to these pans to shower our babies and kids. We had no such problems before the flood disaster.

According to Moreno and Shaw (2018), women are the vulnerable groups that need to be given the same support as children, the elderly and people with disabilities when disasters strike. However, the research found that the disruption of social roles also occurred among men. For example, one victim, a 42 years old man, reported:

It has been a long time when we are trying to re-construct our home. We like to get back to our job routine. But,

unfortunately, we cannot do agriculture and other jobs before building our house back to normal.

Although the disruption of social roles did not last long, the situation could threaten the dynamics of family relationships. Disruption of social roles was found to cause emotional impact when the victims had to do homework that he or she had never done before. The situation, in turn could affect the harmony and peace of a family. Furthermore, current social issues faced by the victim's family, such as financial problems, could exacerbate the existing situation and causing stress. This situation could also increase the social vulnerability and challenge the social resilience of victims to rising and recovery.

Uncertainty of Employment

This research found that the floods have brought disruption by the uncertainty of employment. The floods have caused destruction and physical damage to groceries, livestock, crops and numerous others, which were the source of income for the victims. Thus, victims suffered from the loss of economic sources, especially jobs related to natural resources. A study by Wilson et al. (2018) on the Hu communities in Scihuan, China, found that economic aspects strongly influence community resilience to disasters. One of the male victims aged 43 explained:

Most of us catch fish. We take wages to make some fish-based products like *keropok lekor*, *belacan*, *budu*, *ikan*

kering and any types of crackers or chips. It was our seasonal job. However, they are ruined. We need jobs to get back to our everyday and ordinary life. We have some skills, but the situation is not prepared for using the skills and restoring the job.

Another victim, a 47 years old single mother, reported the situation after the flood disaster as follows:

My house was destroyed. Many items were destroyed because they could not be saved. I am a single mother. No one came to help us at that time when the flood happened suddenly. Only me and my kids. Everyone needed to save themselves and their belongings from the flood. After that, I had no hope and motivation to go back and continue. I became unemployed.

The same thing also happened to the plight of farmers and ranchers who have to deal with the loss of jobs and sources of income. One of the victims, a 56 years old woman, has associated the job loss with emotional impact. It is elucidated as "farmers have to bear losses when their crops were destroyed. Ranchers were facing the loss of livestock. They lost money and their job. They were depressed when they could not work."

The 2014 flood disaster had a very significant impact as the victims had to deal with employment disruption. Undoubtedly, flood disaster affects the lives of all groups regardless of the economic activities carried out. It also affects the reduction of

income and increased poverty, especially in rural areas. Meanwhile, job loss and deteriorating sources of income could also leave a psychosocial effect on individuals. It is disasters that cause the communities especially the victims to be uncertain, thus affecting their ability to move forward and decrease their motivation. The factors contributing to psychological problems among flood disaster victims are limited economic resources (Wilson et al., 2018) due to the high needs among the victims involved.

Instability of Social Routine

The studies have found that flood disasters have caused the victim's daily social routine to become erratic and less stable. In relation to this, one victim aged 49 explained her situation as follows:

Before the flood, we were all busy with our everyday life. We knew what to do, where to go, what we were looking for. But after the disaster, we spend days and nights with thoughts of all of our troubles. We feel that we do not know what to do, where to go and what will happen. We then being forced to leave and stay in the evacuation centre.

The victims claimed that they had to spend their time in the evacuation centre without doing any activities until they were allowed to go home, as part of post-disaster recovery activities conducted by the authority. Post-disaster rehabilitation activities could encourage the victims to

recover after a disaster. This situation was found to exacerbate the emotional stress experienced by victims. There was concern among the victims when they often thought about their lives that have been partially destroyed due to the disaster. One of the woman victims aged 24 sadly narrated:

We did not know what to do at the evacuation centre... no activities for us. So, I have started to think about many unnecessary things. I was worried. Is everything safe, or there is nothing left for us? I could not go back home.

The flood disaster has disrupted the social routine of victims and other residents. The effects of the flood have caused the social instability of the community, especially those in flood-prone areas. Whenever a society faces a problem, there will be less stability in handling the situation due to the impact or threat from the problem. It meant that victims experienced various disturbances in everyday life as they failed to restore social stability before the flood. Hence, critical infrastructure needs to be overhauled, including electricity, water, gas and telecommunications (Moreno & Shaw, 2018), ensuring the community can live their daily lives as usual and maintain the existing social routine.

Collective Trauma

In addition, the social disruption of flood disasters has also caused victims to face psychological outcomes, like trauma. In large-scale natural disasters, many residents

suffered actual damage, including job loss or destruction of their residence (Lee et al., 2020). In this study, trauma is not only faced by the victims individually but collectively. Concerning trauma, society is often socialized with someone who has experienced a traumatic event and profoundly affects their emotional health. The unexpected flood disaster was found to cause the victim's readiness to be at a low level and insufficient. One of the victims, a 33 years old, woman described the situation as below:

I was traumatised and afraid that a flood like this will happen again in the future. I do not know what to do if the flood will come worse than this. When the monsoon season arrives, we start to panic, fear and trauma. We will immediately move the goods.

The 2014 flood disaster that occurred has affected the victim in terms of emotions. It destroyed housing, property loss, valuables, damage to infrastructure and physical resources facilities that directly affected the quality of life. Nygaard and Heir (2012) argued that the form and violence certainly affect psychological health and quality of life. A victim, 65 years old man, described the situation that related to emotions as follows:

I was sad when I saw the condition of our house—lots of damaged. Our village was almost destroyed. All facilities are damaged and no longer able to be used.

Our village is not like before. Lots of mud and rubbish everywhere. Our village is dirty. Our goods have also been carried away.

The trauma and emotional disruptions experienced by victims are depended on their vulnerability, resilience, and preparation to adapt to the situation or changes caused by the flood disaster. In outline, the results show that mental health outcome is a social disruption that victims need to face right after the flood disaster. However, it was directly or indirectly hidden in most of the emerged signs.

The findings show that the significant impact of the disaster on society is trauma when the victims begin to feel that their lives are ruined, and their future is blurred. Trauma usually occurs, especially to the victims who face significant physical destruction and damage due to flood disasters. Victims also experience a decline in quality of life and well-being until it plugged their motivation by reducing their ability to recover from such events. To rub salt into the wound, Malaysia has floods almost every year, which continue to disrupt and upset the lives of communities.

DISCUSSION

Heavy rains in Hulu Dungun are typically the cause of floods when the Northeast monsoon season arrives from November to March every year. Therefore, such flood phenomena are categorised as annual floods as they occur during the yearly monsoon season. The 2014 flood disaster that occurred

in Hulu Dungun was the worst since 1983. This phenomenon was unprecedented in the history of its existence. The physical impact of a flood disaster is usually the most evident and assessable. However, the social impact is difficult to measure. Therefore, there is a need for discussion to understand the social impact after the flood disaster, specifically social disruption and social resilience.

Flood Victims Facing Disruption

The research has identified significant issues after the 2014 flood disaster in several rural areas of Hulu Dungun. Thus, by analysing the perspectives of victims dealing with recovery, the research has provided an indispensable perspective on the most critical issues during the recovery process. Initially, social disruption is found to be the fundamental concept that is being explored throughout this study. The leading cause leads the victims to suffer from difficulties and weak social resilience, prolonging the recovery process.

Generally, managing and recovery from disasters is the best way to reduce the social disruption experienced by victims. Social recovery is an essential factor in disaster management. It refers to a collaborative process to support disaster-stricken communities. Moreover, it falls under the reconstruction of physical infrastructure and restoring their emotional, economic and social well-being. However, post-disaster recovery is an issue that still lacks attention among researchers, especially in studying natural hazards and disasters (Chang, 2010). The ineffectiveness of a post-disaster

recovery plan can exacerbate the disruption experienced by victims. For example, the flood disaster has disrupted social roles among victims. The fact states social roles as a set of that social expectations and obligations that society expects individuals to carry out (e.g., the victim's roles and responsibilities in the family institution).

In addition, flood disaster that occurred has brought other social disruption, such as uncertainty of employment. Flooding was evident clearly by leaving damage on properties, houses, crops, resources, drinking water, sanitation equipment and transportation routes. These had caused vulnerable groups to have no access, unable to go to work, which resulted in a loss of income (Wisitwong & MacMillan, 2010). However, some victims acknowledge that providing employment infrastructure is an action that can be taken to enable them to return to everyday life. To that end, the importance of restoring the jobs of local communities at risk should be given as a priority. Besides, the flood disaster also caused a change in daily social routine among the victims. Disaster studies from a social perspective show that sudden disasters can disrupt routines, and action to overcome the disruption is highly required (Albrecht, 2017). This research also reveals that flood disasters involve many types of losses, including serious injuries or deaths, health problems and social dysfunctions that finally contribute to collective trauma. Therefore, resilience is seen to be a function to show the spirit of solidarity with the community of belonging despite being plugged by the crisis (Md. Akhir et al., 2020).

Building Social Resilience after Flood Disaster

The finding indicated that the presence of protective elements was significant in social development by building social resilience among the victims. This role is usually demonstrated by a close family member, social strength around, and social support from the local authorities. The flood disaster has profoundly impacted the victims, disrupting their physical, economic, social and emotional well-being. The building of social resilience among victims facing such disruption is undoubtedly obtained from close family members.

Some victims stated that the social support they received from family members was able to build positive resilience. For example, a victim, 22 years old woman, said, "My family helped a lot at that time. I felt moved when people around me were willing to help me. I felt even more enthusiastic. I was delighted and grateful."

Meanwhile, studies have found that the victims living alone cannot obtain adequate social support from family members. As alleged by a 70 years old elderly victim who lives alone, he could only wait until help from the authorities or the public arrived, especially from the aspect of rescue and food supply, "I can't do anything. I live alone. I can only wait for people, let's just help then... I can't even save myself. I felt sad and resigned."

This situation can further increase the stress and grief experienced by the victims due to the disability they face. Furthermore, the age factor and health problems faced

by the victims also restraining them from evacuating during the floods. Lack of social support due to misunderstandings among family members can cause them to drown in symptoms of emotional disturbances such as feeling sad, depressed and worried about the future, prefer to be alone and often cry. The experience often faced by the victims is about the loss of physical property. However, it also traces into a social relationship.

Good relationships and social trust in the community help victims regain their strength to return to 'normal' and 'stable' life after the flood disaster. The intelligent community is also able to influence the building of victim's resilience. However, social capital is vital to form a good relationship between members of the community. Strong cooperation, trust, helpfulness and cooperation between the victims with the help of community members were found to aid the victims in recovering from the disaster that occurred beyond their expectations and preparations. Nevertheless, the role of too much social capital is alleged to cause the victims to be unprepared to face the risks, dangers and flood disasters.

It means that the social support from the social networks that exist in a community can minimise the effects of the flood disaster, and in turn, maximise the resilience of the victims to recover after the flood disaster. Nonetheless, the impact of vulnerability does not occur in all communities but rather depends on the changes experienced by a community, their accessibility to livelihood assets such as social, natural, physical,

financial, and human capital. In addition, a community that can deal with disasters is the one who experienced the situation and can recover quickly to rise from the pain as they refuse to suffer from such traumatic events for an extended period (Imperiale & Vanclay, 2016).

Sometimes, the assistance needs to be channelled to the victims, even with experience and knowledge. Some victims are panic and afraid, as they do not know how to cope with the flood disaster. In the early stages, after the flood disaster, the level of resilience of victims is usually low, thus causing help from other parties, especially members of their community, to help them (Moreno et al., 2018). As noted earlier, the victims also face difficulties to carry out the social routine that they usually do every day calmly. In addition, some victims do not realise that they face emotional problems that make it difficult for them to survive after the disaster.

The research found that social support from the local authorities is also one-factor influencing social resilience building. The sharp increase in the number of victims in the 2014 floods disaster has meant that more humanitarian assistance is needed to deal with the situation. Therefore, it is significant for the authorities, especially those at the local level, to contribute their time, skills, and resources to help. As we all know, local authorities consist of people with various backgrounds, careers and skills. They are also the people closest to the victims and have different experiences in delivering disaster relief, which is defined as an activity

that involves rescue assistance, finding missing victims and rehabilitation assistance (Dobashi et al., 2014).

Results strongly support that even in minor issues related to the community, the victims should be asked to get their ideas and input on post-disaster recovery. They are also asked to engage in aspects of reconstruction and redevelopment to prevent victims from feeling left out and increasingly resilient to recover after the flood. The current researchers believe that if most of the planning is based on a top-down approach, this could cause the victims to feel frustrated and lacked a sense of belonging and ownership, regardless of the efforts in helping them. Therefore, the victims need to be posited as actors who need to actively play a role or down-top approach in disaster management where their resilience is strengthened.

When asked, a 55 years old male victim admitted that the support of the authorities was very important to avoid dissatisfaction and feelings of exclusion.

Support from authorities is very important. Everything, if possible, should involve the locals... so that they do not feel left out. Actually, feeling left out may make the victims more resilient. They can't get help, and nobody wants to hear their problems. Sometimes, the problems of the locals can be solved when the authorities listen to the voices of the locals themselves.

In addition, victims claimed that the social support shown by local authorities in helping them during and after the flood

disaster facilitated their process to return to normal unknowingly. For example, a victim, a 22 years old man, reflected the situation as below:

The village head here always comes to visit us. We feel strong to wake up when 'big people' always pay attention... he takes it seriously. In terms of aid, it is also divided fairly. There is no favouritism.

In the less 'stable' situation, the cooperation of local authorities such as flood disaster management committees, local agencies, the government, local leaders, non-governmental organizations and individuals can help the victims to recover from the disruption. For instance, the transparent distribution of disaster relief, solid social and emotional support from the various parties during and after the flood disaster was beneficial. Hence, post-disaster recovery involves the reconstruction of infrastructure in the affected areas and involves restoring the lives of victims and building their social resilience after the disaster.

CONCLUSION

Social issues in particular such as social disruption, are hidden. However, they are significant to be catered to in every post-disaster. Therefore, focusing on these issues enables victims to regain their everyday lives, social development and increase social resilience after the disaster. According to the results, policymakers are proposed to change their perceptions of the post-disaster recovery process, by involving a

linear and outcome-oriented approach to continuous, prolonged and comprehensive. Meanwhile, flood management plans also need to consider the social issues proposed by policymakers, especially those discussed in this study. In addition, trained disaster management teams need to be expanded by using a participatory approach in social work after a disaster, such as a community-based approach that can strengthen social capital in flood-prone areas and increase social resilience among victims.

Therefore, future studies can be conducted using quantitative analysis to delve into the social disruption experienced by the victims caused by extreme or traumatic events. It can also able to formulate solutions to reduce the vulnerability of the flood risk while maximising public safety. To gain better insight, future researchers should collect data in a more overall sample size to support the generalisation of the findings. It is also essential to increase the number of disaster-related programs or campaigns to develop communities to understand flood vulnerabilities and strategies to manage flood risk without relying on external entities.

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REFERENCES

- Albrecht, F. (2017). *The social and political impact of natural disaster: Investigating attitudes and media coverage in the wake of disaster* [Doctoral dissertation, Uppsala University]. Digital Comprehensive Summaries of Uppsala Dissertations. <http://uu.diva-portal.org/smash/get/diva2:1090236/FULLTEXT01.pdf>
- Alias, N. A., Mohd Idris, M. D., Siwar, C., Md Mahmudul, A., & Yasar, M. (2021). Community preparation and vulnerability indices for floods in Pahang State of Malaysia. *Land, 10*(198), 1-23. <https://doi.org/10.3390/land10020198>
- Bănică, A., Kourtit, K., & Nijkamp, P. (2020). Natural disaster as a development opportunity: A spatial economic resilience interpretation. *Review of Regional Research, 40*(3), 223-249. <https://doi.org/10.1007/s10037-020-00141-8>
- Burnes, B. (2009). *Managing change: A strategic approach to organizational dynamics*. Pearson Education.
- Chang, S. E. (2010). Urban disaster recovery: A measurement framework and its application to the 1995 Kobe earthquake. *Disasters, 34*(2), 303-327. <https://doi.org/10.1111/j.1467-7717.2009.01130.x>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mix methods approaches*. Sage Publication.
- Dobashi, K., Nasmine, M., Shigemaru, J., Tsunoda, T., Shimizu, K., Yoshino, A., & Nomuro, S. (2014). Psychological effects of disaster relief activities on Japan ground self-defense force personnel following the 2011 great east Japan earthquake. *Psychiatry, 77*(2), 190-198. <https://doi.org/10.1521/psyc.2014.77.2.190>
- Elfithri, R., Halimshah, S., Abdullah, M. P., Mokhtar, M., Toriman, M. E., Embi, A. H., Abdullah, M., Heng, L. K., Ahmad Maulud, K. N., Salleh, S., Maizan, M., & Ramzan, N. M. (2017). Pahang flood disaster: The potential flood drivers. *Malaysian Journal Geoscience, 1*(1), 34-37. <https://doi.org/10.26480/mjg.01.2017.34.37>
- Imperiale, A. J., & Vanclay, F. (2016). Experiencing local community resilience in action: Learning from post-disaster communities. *Journal of Rural Studies, 47*(Part A), 204-219. <https://doi.org/10.1016/j.jrurstud.2016.08.002>
- Isahak, A., Reza, M. I. H., Siwar, C., Ismail, S. M., Sulaiman, N., Hanafi, Z., Zainuddin, M. S., & Taha, M. R. (2018). Delineating risk zones and evaluation of shelter centres for flood disaster management along the Pahang River Basin, Malaysia. *Jàmbá: Journal of Disaster Risk Studies, 10*(1), 1-7. <https://doi.org/10.4102/jamba.v10i1.501>
- Jurjanos, M., & Seekamp, E. (2018). Rural coastal community resilience: Assessing a framework in eastern North Carolina. *Ocean and Coastal Management, 162*, 137-150. <https://doi.org/10.1016/j.ocecoaman.2017.10.010>
- Lee, J. Y., Kim, S. W., & Kim, J. M. (2020). The impact of community disaster trauma: A focus on emerging research of PTSD and other mental health outcomes. *Channam Medical Journal, 56*(2), 99-107. <https://doi.org/10.4068/cmj.2020.56.2.99>
- Liamputtong, P. (2010). Cross-cultural research and qualitative inquiry. *Turkish Online Journal of Qualitative Inquiry, 1*(1), 1-83.
- Madhuri, M., Tewari, H. R., & Bhowmick, P. K. (2014). Livelihood vulnerability index analysis: An approach to study vulnerability in the context of Bihar. *Jamba: Journal of Disaster Risk Studies, 6*(1), 1-13. <https://doi.org/10.4102/jamba.v6i1.127>
- McDermott, B. M., & Cobham, V. E. (2012). Family functioning in the aftermath of a natural disaster. *BMC Psychiatry, 12*, Article 55. <https://doi.org/10.1186/1471-244X-12-55>
- Md. Akhir, N., Zakaria, S. M., Soh, O. K., & Amin, A. S. (2020). A review on the psychological issue

- and psychosocial intervention: Flood disaster in Malaysia. *International Journal of Psychosocial Rehabilitation*, 24(4), 4337-4349. <https://doi.org/10.37200/IJPR/V24I4/PR201539>
- Moreno, J., & Shaw, D. (2018). Women's empowerment following disaster: A longitudinal study of social change. *Natural Hazards*, 92, 205-224. <https://doi.org/10.1007/s11069-018-3204-4>
- Moreno, J., Lara, A., & Torres, M. (2018). Community resilience in response to the 2010 Tsunami in Chile: The survival of a small-scale fishing community. *International Journal of Disaster Risk Reduction*, 33, 376-384. <https://doi.org/10.1016/j.ijdr.2018.10.024>
- Morton, M. J., & Lurie, N. (2013). Community resilience and public health practice. *American Journal of Public Health*, 103(7), 1158-1160. <https://doi.org/10.2105/AJPH.2013.301354>
- Norris, F. H., Tracy, M., & Galea, S. (2009). Looking for resilience: Understanding the longitudinal trajectories of responses to stress. *Social Sciences and Medicine*, 68(12), 2190-2198. <https://doi.org/10.1016/j.socscimed.2009.03.043>
- Nygaard, E., & Heir, T. (2012). World assumptions, post traumatic stress and quality of life after a natural disaster: A longitudinal study. *Health and Quality of Life Outcome*, 10, Article 76. <https://doi.org/10.1186/1477-7525-10-76>
- Palekiencė, O., Bruneckienė, J., & Simanavičienė, Z. (2014). Critical analysis of loss and damage concepts under process of economic assessment. *Procedia-Social and Behavioral Sciences*, 156(2), 304-309. <https://doi.org/10.1016/j.sbspro.2014.11.193>
- Schlehe, J. (2010). Anthropology of religion: Disasters and the representations of tradition and modernity. *Religion*, 40(2), 112-120. <https://doi.org/10.1016/j.religion.2009.12.004>
- Tan, N. T. (2013). Policy and collaboration for social recovery after disaster. *Journal of Social Work in Disability and Rehabilitation*, 12(1-2), 145-157. <https://doi.org/10.1080/1536710X.2013.784606>
- Toland, J., & Carrigan, D. (2011). Educational psychology and resilience: New concept, new opportunities. *School Psychology International*, 32(1), 95-106. <https://doi.org/10.1177/0143034310397284>
- Vollmer, H. (2013). *The sociology of disruption, disaster and social change*. Cambridge University Press.
- Wilson, G. A., Hu, Z., & Rahman, S. (2018). Community resilience in rural China: The case of Hu Village, Sichuan Province. *Journal of Rural Studies*, 60, 130-140. <https://doi.org/10.1016/j.jrurstud.2018.03.016>
- Wisitwong, A., & MacMillan, M. (2010). Management of flood victims: Chainat Province, Central Thailand. *Nursing and Health Sciences*, 12, 4-8. <https://doi.org/10.1111/j.1442-2018.2009.00504.x>
- Wood, N. J., Burton, C. G., & Cutter, S. L. (2010). Community variations in social vulnerability to Cascadia-related tsunamis in the U.S Pacific Northwest. *Natural Hazards*, 52(2), 369-389. <https://doi.org/10.1007/s11069-009-9376-1>
- Yin, R. K. (2014). *Case study research design and methods*. Sage Publication.
- Yusoff, S., Abdul Aziz, R., & Yusoff, N. H. (2018). Impak sosioekonomi bencana banjir 2014: Tindakan penyesuaian dan kesiapsiagaan lokal [The socio-economic impact of the 2014 flood disaster: Local adaptation and preparedness]. *Geografia Online Malaysian Journal of Society and Space*, 14(4), 74-88. <http://ejournal.ukm.my/gmjss/article/view/27581>
- Zakour, M. J. (2010). Vulnerability and risk assessment: Building community resilience. In D. F. Gillespie & K. Danso (Eds.), *Disaster concepts and issues: A guide for social work education and practice* (pp. 15-60). Council on Social Work Education.