

NATURAL DISASTERS (FLOODS) CRISIS IN MALAYSIA AND ITS IMPACT ON THE NATIONAL ECONOMY: PERCEPTION ANALYSIS THROUGH THE 3PS MODEL

SITI SABRINA IMJI RAHIM¹, MOHD IKBAL MOHD HUDA^{2*}

Centre For History, Politics and International Affairs,
Faculty of Social Sciences & Humanities, Universiti Kebangsaan Malaysia¹

Centre For History, Politics and International Affairs,
Faculty of Social Sciences & Humanities, Universiti Kebangsaan Malaysia²

*Coordinator, M.Soc.Sc. in Strategy and Diplomacy,
Faculty of Social Sciences & Humanities,
The National University of Malaysia.

teenasabrina@gmail.com¹

ibahuda@ukm.edu.my²

Abstract - Flood is one of natural disasters crises that occur not only in Malaysia, but also in foreign countries. The flood disaster has caused the country to suffer huge losses due to the property destruction, and cost people's lives. In Malaysia, almost all states have been hit by floods. To deal with it, various initiatives have been implemented by the Government, in collaboration with the private sector and Non-Governmental Organizations (NGOs). The people also show great cooperation by implementing early preparations to deal with floods. However, there are different perceptions on flood disaster effects in economic aspect. Thus, this article will identify the extent to which the flood crisis in Malaysia affects the country's economy. The study will be carried out by analyzing the Government, private sector, and people, as well as NGOs perceptions based on the perspective of 3Ps Model. The study uses qualitative and analytical methods by referring to primary and secondary documents such as official reports, academic journals, and online news as well as through interviews with Government officials and NGOs. The analysis results found that the natural disasters crisis that occurred had a profound impact on the national economy when the country suffered high losses, as well as the people who suffered losses due to the destruction of properties that were flooded, including the need to spend for flood mitigation. The government, private sector and NGOs have also incurred high costs to aid flood victims.

Keywords: Floods; natural disasters crisis; national economy; Government; private sector; people; Non-Governmental Organizations (NGOs); perception; 3Ps Model

INTRODUCTION

The most severe natural disaster crisis in Malaysia is the "flood" disaster, which reached a national loss of RM300 million in the state of Sarawak in 2009, followed by Kedah and Perlis in 2010 which led to people loss of life due to drowning and around 50,000 victims are being moved. Then, it happened at the East Coast in 2014, namely Kelantan, where there was a monsoon wind disaster, resulting in a national loss of RM200 million. In 2017, flood disaster then hit the state of Sabah and caused the bridge collapse. It can be seen that all these incidents affect the national economy when it cost the country up to millions ringgit. Referring to the Department of Statistics Malaysia through a report on January 28, 2022, there are many and various losses suffered by the country and people as a result of the floods that occurred in 2021 as shown in the following table:

Table of Total Losses Due to Floods at Malaysia in 2021

DAMAGE	TOTAL LOSS (RM)
Public Assets and Infrastructure	2.0 billion
Residence	1.6 billion
Vehicle	1.0 billion
Manufacturing	0.9 billion
Business premises	0.5 billion
Agriculture	90.6 million

Source: Department of Statistics Malaysia



Based on the table above, the 2021 floods in Malaysia have resulted in billions and millions of ringgit losses to the country and people due to damage of public assets and infrastructure, residences, vehicles, manufacturing, business premises and agriculture.

If viewed from an overseas perspective, the flood disaster also occurred severely in Japan when heavy rains have caused devastating damage almost every year since 2014 where many people's lives have been lost (Nonomura et al., 2020). The heaviest rainfall ever recorded in Nagoya City, Japan (566.5 mm) occurred on September 11 to 12, 2000 and caused the local river to burst its banks and flood the city (Takao et al., 2004). In a comparison between Tokyo Metropolis (Japan) and Catalonia (Spain) for a period of 30 years (1981-2010), a total of 219 flood events and 110 deaths were recorded in Catalonia while 191 floods and 27 deaths and missing persons were recorded in Tokyo (Nakamura & Llasat, 2017).

Flood also occurs in Indonesia, which is considered one of the major natural disasters. The city of Jakarta in Indonesia has experienced many floods involving the years 1996, 2002, 2007 and 2013 (Riyando et al., 2016). The flood disaster that occurred in Indonesia is an event that has been repeated for several years and has brought great loss in terms of human life, infrastructure, resources as well as social and economic disruption (Hapsari & Zenurianto, 2016). The flood that occurred in Tebo Regency, Indonesia has resulted a quality decline in the life of the population from various health problems that plagued the population. The constraint faced by the government in dealing with floods in Tebo Regency involves the lack of funds (Udori & Miranti, 2019). Therefore, floods have created widespread social and economic problems in Indonesia and have had a major impact on livelihoods (AWells et al., 2016).

Thus, Indonesia and Japan have experienced floods every year. Both countries suffered undue losses from severe property damage and high casualties, like what happened in Malaysia. Therefore, this natural disaster crisis has become a national priority due to the loss of people's lives, destruction of property and large national losses. This crisis should not be taken lightly, especially since the natural disaster that occurs is a form of unforeseen threat that cannot be ascertained when it will hit the country. This article will analyze the extent to which this flood crisis has affected the Malaysia national economy. The analysis is carried out by suppressing the perception of the government, private sector and people including NGOs based on the 3Ps Model.

1. RESEARCH METHODOLOGY

This study uses the Qualitative Method which is a research method through search, description, and non-numerical observation even though there is evidence that refers to statistics. This method provides information, interpretation or meaning in a communication process as well as providing information about the nature and condition of humans by using a general view of any social action (Hamzah, 2010).

Commonly used qualitative data collection methods are observation, interview, and document analysis (Jasmi, 2012). Qualitative data is divided into primary data and secondary data. Primary data are original materials such as historical documents and official government reports. Secondary data is data obtained from academic journal articles, books, or conference papers. Therefore, the Qualitative Method will be used by the authors through interviews with government officials from the National Security Council (NSC) and the Ministry of Defense (MINDEF) as well as NGOs. Document analysis derives from official Government documents/reports and websites, journals, articles, and news.

2. TRIPARTITE MODEL OF NATIONAL SECURITY (3PS MODEL)

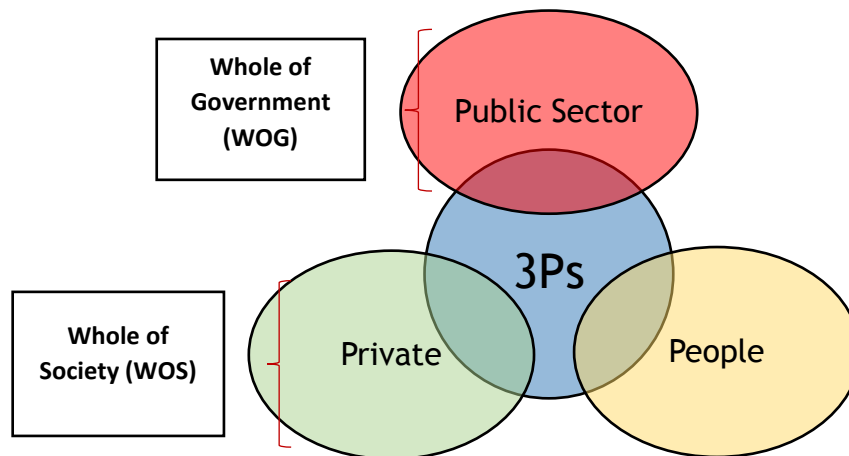
The 3Ps model refers to the Public Sector, Private and People, which was built based on writings by scholars Park and Chung (2021), Zaini (2020) and E. Ite (2003). Park & Chung (2021) stated that the Government in South Korea has involved the private sector in curbing the spread of Covid-19. The involvement is through cooperation in the formation of test kits and health checks for the Covid-19 epidemic throughout the country, including for the people and non-citizens. This approach by the South Korean Government has proven that the spread of Covid-19 epidemic has been successfully dealt with in just one month at the beginning of the spread.

Zaini (2020) proved that information from the public has increased enforcement and inspection in Negeri Sembilan, Malaysia and led to the successful suppression of human trafficking syndicates on

the Malaysia-Indonesia border. His writing shows that cooperation between the government and the people is important in dealing with national security threats. He also highlighted the Whole of Government (WOG) and Whole of Society (WOS) methods as a form of coordination between government agencies and society in perfecting the national security framework.

E. Ite (2003) emphasized the importance of Nigeria through the Government in dealing with the issue of people's poverty with an attitude of trust and transparency to be able to contribute on the wealth and economic growth of the country. With that, it forms the Tripartite Model of National Security (3Ps Model) which involves the government, the private sector, and the public. The diagram of the 3Ps Model is as follows:

Diagram of the Tripartite Model of National Security (3Ps Model)



Source: Author's findings with adaptation of ideas from Park and Chung (2021), Zaini (2020) and E. Ite (2003)

3. DEVELOPMENT OF NATURAL DISASTER POLICY AND LEGISLATIVE MECHANISMS IN MALAYSIA

Disaster management in Malaysia is managed based on one of the Directives under National Security Council (NSC), which is NSC Directive No. 20 (National Disaster Management and Assistance Policy Mechanism) issued by NSC on May 11, 1997, and was updated on March 30, 2012. The revision was made due to a need for a comprehensive response, disasters are becoming more complex and additional involvement of the private sector and voluntary organizations. This directive is implemented by the National Disaster Management Agency (NADMA) which used to be one of the divisions under NSC but has become a single agency starting on August 26, 2015. The purpose of this directive is to formulate policies in national disaster crisis management that based on systematic integration/coordination, creating a coordinates disaster crisis management policy, coordination between rescuers and organized emergency assistance, as well as having a Special Search and Rescue Team.

There are three disaster management platforms comprises of (i) the Central Disaster Management Committee which is chaired by Minister in the Prime Minister's Department to determine the national disaster management policy, assets, finance and human resources and deal with level three disasters (more complex disasters); (ii) The State Disaster Management Committee which is chaired by the State Government Secretary to provide assistance that affected Districts such as financial assistance, assets and human resources and deal with level two disasters (serious events); and (iii) the District Disaster Management Committee which is chaired by the District Officer to ensure that all actions are coordinated, assets and human resources are sufficient, liaise with the media and deal with level one disasters (local events, controlled and with no potential to spread). Reaction mechanism in NSC Directive No. 20 is as soon as a disaster occurs, the Incident Control Post must be opened by the Police Chief as the Disaster Operations Commander, as well as the Disaster Operations Control Center must be opened by the Disaster Management Committee Secretariat which deemed appropriate. Other security agencies responsible under NSC Directive No.



20 also need to open operations including the Special Malaysia Disaster Assistance and Rescue Team (SMART) Operations Room, Operations Management Center, and Operations Movement Center, as well as Operations Control Center (Malaysia Civil Defense Force), Control Center (Royal Malaysia Police - RMP), Defense Operations Center (Malaysian Armed Forces - MAF) and Ministry of Health Operations Room. Many agencies are involved in disaster management and assistance at the scene and are divided into search and rescue services, health and medical services, welfare, support, security control, media as well as technical and specialist agencies.

Disaster management is also outlined as one of the core values in the National Security Policy 2021-2025 issued by NSC on July 7, 2021. It is placed under the 8th core value (people's safety) as well as the 38th Security Landscape (Disaster Events) which explains that Malaysia is exposed to the dangers and risks of natural disasters such as floods, typhoons, storms, infectious diseases, epidemics, earthquakes, tsunamis, droughts/El-Nino, landslides, haze, the effects of climate change on catastrophic events such as sea level rise, air and land temperatures and man-made disasters. Complex and large-scale disasters that occur either inside or outside the country can affect people's lives and slow down the country's administration. Also placed under the 43rd Security Landscape (Crisis and Disaster Resilience) which is in facing challenges during crises and disasters, and the responsibility of handling the situation does not only rest with the government machinery alone. All levels of society have their respective functions and roles in jointly mobilizing efforts to deal with it. It is very important for all levels of society to build resilience in dealing with any form of crisis and disaster.

4. Analysis of Natural Disasters (Floods) Crisis Impact on The National Economy in Malaysia Based on The Government, Private and People Perceptions

To assess the general perception of the flood crisis impact on the national economy, the 3Ps Model will be applied where this model has been developed by researchers based on the summary of journal writing by past scholars.

4.1 Public and private perception

Although communities on the East Coast of Peninsular Malaysia such as the states of Kelantan, Terengganu and Pahang have been hit by floods since 1911 and 1926, then faced the biggest flood in 2014, and the latest in 2021, but the residents are still not fully prepared and have a moderate level of community resilience in facing the flood crisis which requires a focus on increasing community capacity through knowledge, relationships, income, availability of basic facilities, dependence and others (Zal, 2018).

For example, the residents of Kuala Krai, Kelantan took a long time to recover from the post-flood recovery in which the lack of preparation and flood strategies by the local population led to high-scale destruction. Most of the flood victims have experience of dealing with previous floods because floods in Kelantan can be expected to happen at the end of the year but still do not take any action to improve the ability to deal with floods. This is because they see floods as something positive and are not aware that they are being threatened. Most of those affected are the poor and elderly. Dependence on the government and aid from NGOs, individuals and volunteers is also high on temporary accommodation provided because they do not have their own land (Anua et al., 2021).

The big flood in 2014 that hit Bandar Lama Gua Musang, Kelantan was considered as a small or land tsunami by residents and traders. Traders did not have time to save their business goods due to the sudden and rapid rise in the river water level until it reached dangerous levels along with the rapid flow of muddy water (Said & Suhaimi, 2015). Traders in Bandar Kuala Krai during the 2014 flood who have a high level of preparation for flood disasters have a low risk of loss (See et al., 2017).

However, residents in Kelantan have made preliminary preparations to face floods where most of the residents who live near the river build higher houses and prepare resources such as food, drinks, boats, etc., which are sufficient for a month or more if the rain continues. They are also ready to move to higher and safer areas with important documents (Hua, 2019). Victims of the 2014 flood in Kelantan need to hand help and support from physical aspects such as permanent housing assistance, financial assistance, and economic recovery as well as counseling on stress and crisis management. (Akhir et al., 2017).



Destruction of property and loss of life can occur if the responsible party does not take appropriate action, such as the devastating flood in 2014 at the state of Kelantan that resulted in some victims being completely paralyzed and the government having to bear losses of hundreds of million ringgits due to the severe destruction of public infrastructure (Syed Hussain et al., 2015). The fact is the government, private individuals, and certain organizations such as NGOs have provided appropriate assistance to the victims of the 2014 flood that not only hit the east coast but the northern states and Borneo. Aid is channeled in the form of food, clothing, medicine, flood victim settlement centers and transportation (Azman & Ismail, 2016).

The victims of the 2014 flood in Kedah were also given various assistance and donations from the Federal government, State government, NGOs, political parties, representatives, and individuals. Financial assistance is contributed by the Federal and State governments. The victims' perception of the aid delivery system implemented by the authorities is that they are satisfied. However, they feel that there is a weakness in the coordination of aid between institutions that contribute non-financial aid when there are flood victims who do not receive aid and some who receive more than once (Khalid et al., 2010).

The victims of the 2014 flood in Kedah implemented a mitigation plan on a small scale according to their ability. Due to that, the flood risk reduction plan that is implemented does not last long and is easily destroyed when repeated flooding occurs. Most of them are poor, where apart from having to bear the cost of damage and destruction of assets due to floods, they also need to bear the cost of flood mitigation (Anuar et al., 2010). Therefore, opinions and views from various parties such as government agencies and institutions, non-governmental organizations, as well as academics and victims are needed to produce mitigation and prevent flood disasters. The actions from all parties will cause opposition to the population but can improve the standard of living affected by the flood (Buslima et al., 2018).

Flood victims in the Padang Terap district, Kedah have been given shelter and food assistance, but conflict has occurred at the flood evacuation center due to insufficient food, lack of understanding among flood victims and the overcrowded evacuation center as well as inadequate infrastructure equipment. Conflict also occurs due to inefficiency in flood management as well as the attitude of flood victims. There are flood victims who refuse to move at evacuation centers where food aid from flood management agencies is usually placed there, causing those who refuse to move not receive the aid. The aid was even received by non-flood victims. The agencies responsible for managing the aid channel are the NSC, Malaysian Civil Defense (JPAM), Social Welfare Department (JKM), and Padang Terap District Office (PDPT), which is alleged to be managing it unsystematically. Poor flood management will make the whole system weak. NSC was also asked to re-examine the RM500 aid given as compensation because it was said to be low and not equivalent to all the damage suffered by the victims (Said et al., 2013).

An effective flood disaster management system requires cooperation from various parties, not only the government but the local population. Flood victims in Sarawak have knowledge of the risks, dangers and disasters of floods based on their own experiences in facing flood disasters in their respective residential areas. They mostly live close to the river which is aware that people who live in this kind of area are at risk of facing floods (Temrin & Awang, 2017).

In Sabah, the Government and people work together in carrying out nine types of flood mitigation methods where five of them are managed by the government and the rest are from the villagers. The increased use of mitigation methods has succeeded in reducing the trend of flood frequency. Mitigation carried out by the string of major state losses due to the worst flood event at the Menggatal Basin in July 2005, which has resulted in casualties, damage to property and infrastructure, thus opening the eyes of various parties, including the government and villagers to deal with the flood issue to prevent it from recurring (Jafar et al., 2012).

Victims of the 2014 flood in Hulu Dungun, Terengganu carried out adaptation and preparedness actions in preparation for the flood by making dams from sandbags and used tires, planting coconut trees, preparing food supplies, making boats or rafts, moving to temporary areas, and changing jobs from working in the village as fishermen, farmers and breeders to construction laborers and traders (Yusoff et al., 2018). The community of Temerloh district, Pahang coped with the flood disaster by building tall and stilted houses and providing necessities such as rice and old stored food (sardines and eggs) as well as boats used as water transport (Rameli et al., 2019).

The victims of the 2014 flood in Johor had a low level of preparedness and resulted in property damage and the loss of many lives such as mukim in Sg. Segamat, Buloh Kasap, Gemas and others. The flood disaster management system for mukim needs to focus on the community psychological aspects and is included in NSC Directive No. 20, so that the contemporary flood disaster management system is greater (Syed Hussain, 2015).

Petronas channeled a donation of RM25 million to help the victims of the flood disaster that hit several areas in the country. The funds are allocated by units and subsidiaries of the Petronas Group including the Petronas Foundation which will increase the total contribution with other government-linked companies (GLCs), which are part of the GLC Disaster Response Network (GDRN). In the meantime, the Petronas Sports and Recreation Club, the Petronas Women's Wives and Staff Association and the Petronas Islamic Welfare Body have also started collecting donations to be channeled to the victims through the Malaysian Red Crescent Society (PBSM). Petronas also provides a mobile refueling truck service to help flood victims and serve customers or for rescue operations where gas stations are closed or inaccessible.¹

4.2 Government perception

NSC has carried out its duties in a professional manner at par with the international system by highlighting strategies before, during and after the occurrence of a disaster, including rescue operations and evacuation of flood victims. In the 2014 flood situation that hit the East Coast state at the end of each year, NSC made preliminary preparations in collaboration with other agencies such as Royal Malaysia Police (RMP), Malaysian Armed Forces (MAF), JKM, the Malaysian Fire and Rescue Department (JBPM) and the Civil Defense Department to evacuate flood victims as soon as the water started to rise. NSC also held a Central Disaster Management Committee Meeting (JPBP) as an initial preparatory step where it was also implemented at the State NSC level to deal with state and district issues.

During the flood, NSC coordinates the deployment of government assets throughout the state by zone. The challenges faced are from the logistical aspect of delivering supplies due to bad weather conditions and flooded roads, but NSC uses the post-mortem results of flood management that occur every year to improve weaknesses and be more effective in the future. In the aftermath of the 2014 floods, the Disaster Management Department at NSC was made into a single agency named NADMA on August 26, 2015, through Cabinet of Ministers approval.² The establishment of NADMA is to ensure that the planning and implementation of national disasters can be managed more efficiently, effectively and reach all levels of society, especially disaster victims. Early warnings and predictions from NADMA will help the local community especially in the settlement process as well as the victim's safety.³

However, in the 2021 flood situation, the UMNO President, Dr. Ahmad Zahid bin Hamidi stated that NADMA managed it weakly and lifelessly despite having comprehensive flood disaster coordination guidelines developed since 2014. He also stated that with the high death toll compared to the floods in 1971 and 2014, a flood postmortem should be carried out. However, he appreciated all the help to the flood victims which reached RM61,000 for one family as stated by the Prime Minister of Malaysia at time, Ismail Sabri bin Yaakob.⁴ When he dealt with the flood of 2014 while held the position as Minister of the Interior at time, he ordered agencies under the Ministry of Home Affairs (MOHA) such as JPAM, People's Volunteer Corps (RELA) and RMP as well as MOHA Youth Squad volunteers to go at the field helping victims carry out rescue activities and temporary settlements at the Flood Evacuation Center. He also involved NGOs, welfare associations and the public to provide aid for basic needs by establishing a Public Donation Reception Center at the MOHA premises. He also coordinates cooperation with the Malaysian Prisons Department by giving food every day to flood victims produced by prisoners. In addition, the MOHA held a Special Meeting on Flood Crisis Management 2014 and was responsible for leading efforts to help and coordinate post-flood actions for the State of Perak where discussions were held with the Secretary of the

¹ *BH Online*. (2021).

² Abd Razid, M. A. *BH Online*. (2015).

³ NADMA Official Website.

⁴ *Free Malaysia Today*. (2022).

Perak State Government. Area and house cleaning assistance programs were also held in Kelantan, Terengganu, and Pahang.⁵

The Minister in the Prime Minister's Department, Shahidan Kassim, in 2015 stated that the Government established NADMA, which will take over the duties and roles of the NSC to coordinate and manage disaster relief in the country more effectively, organized, and effective.⁶ He also introduced an insurance protection scheme for flood victims in areas at risk of being hit by natural disasters. The method of insurance protection scheme in flood areas introduced in Kemaman, Terengganu will be applied.⁷ Regarding the floods in Sarawak, he praised the ability of the Sarawak Community Emergency Response Team (CERT) for being active as the first group to mobilize aid, especially in the face of floods. According to him, CERT implements many community programs throughout the year aimed at educating residents in disaster risk areas about early rescue skills before rescue teams arrive.⁸

In the 2014 flood situation, the Malaysian Minister of Defense at the time, Hishammuddin Hussein, also coordinated agencies under MINDEF, namely MAF through the Malaysian Army (MA), the Royal Malaysian Air Force (RMAF) and the Royal Malaysian Navy (RMN) with the Ops Murni establishment to help flood victims. He also involved the National Service Training Department (JLKN) and National Service Training Program (PLKN) in the ops. In addition, from the aid aspect, various parties including government agencies, NGOs, private companies, and individuals have channeled donations in the form of daily necessities and generators to the Flood Victims Supply Donation Reception Center at the RMAF Base in Subang which operates 24 hours a day. He also held an international collaboration with counterpart in Singapore where the Singapore side has lent four units of water purification machines and deployed 20 members for the machine's operation.⁹

However, the Minister of International Trade and Industry (MITI), Mustapa Mohamed who was also the chairman of Kelantan Umno Liaison Body during the 2014 flood incident stated that although preparations for the flood disaster appeared smooth on paper, the reality was different. He stated that the extraordinary floods that hit Kelantan compared to previous incidents as well as the bad weather resulted in certain obstacles and some problems that could not be resolved despite the mobilization of various security and logistics agencies. He has given instructions to improve logistics with NSC as the coordinator. He is also of the view that in coordinating a major natural disaster, quick and accurate instructions must be issued by an experienced leader and there is a need to appoint a commander who is able to handle several departments at the same time.¹⁰

The Prime Minister of Malaysia during the flood of 2014, Najib Tun Razak, stated that there was difficulty in reaching certain flood areas, moving flood victims, and delivering food due to the high-water level which were dangerous for vehicles and rescue boats. Aid delivery efforts using helicopters were interrupted due to bad weather that made it difficult to fly and there were cases where helicopters could not drop aid because of no suitable location to land near the evacuation center. More than 90,000 flood victims in Kelantan, Terengganu, Pahang, Perak, Perlis, and Kedah were transferred to Temporary Transfer Center (PPS) but there were also evacuation centers that were also flooded.¹¹

Rodzi Md Saad, Director General of National Security (NSC) during the flood in Taman Sri Muda, Shah Alam in 2021 stated that the situation and characteristics of floods differ from one place to another, causing disaster management to be different where a certain management needs to be examined and considered by disaster operations commanders first before taking any action and not make general assumptions for all places. However, he stated that disaster management at Taman Sri Muda is going well.¹² He, on behalf of the NSC, also instructed the entire government machinery, especially the security and health agencies, to be on the highest level of preparedness to face flood disasters through the activation of NSC Directive No. 20 as well as calling on the

⁵ KDN Official Website.

⁶ *Astro Awani*. (2015).

⁷ *BH Online*. (2016).

⁸ Ahmad, M. A. F. *BH Online*. (2017).

⁹ MINDEF Official Website.

¹⁰ *The Malaysian Insider*. (2014).

¹¹ *mStar*. (2014).

¹² *Bernama*. (2021).

private sector, NGOs and individuals to join hands so that preparations for flood disasters will be better organized for the safety of the people and country in line with the 'whole of government, whole of society approach'.¹³

Ismail Sabri Yaakob, during the 2021 flood decided that all instructions regarding the actions that need to be taken immediately in dealing with the flood disaster will be issued by NSC, but NADMA's role remains as the main secretariat of disaster management and handles all coordination. However, if an action is not followed, NSC will issue further instructions. The various assistance provided by the government for flood victims includes an allocation of RM100 million for post-flood recovery activities, a courtesy sum of RM1,000 for each affected household head, a loan of RM5,000 through Bank Simpanan Nasional (BSN) to affected traders, business premises rental fee exemption, flood recovery loan facility with an allocation of RM30 million, emergency aid for affected cooperatives reaching RM30,000 and a directive to the Ministry of Environment and Water (KASA) through the Department of Irrigation and Drainage (JPS) to mobilize 20 pump assets move to the affected area. The private sector also contributed as much as RM50.8 million to help deal with floods and post-flood recovery. Ismail Sabri also welcomes NGOs to help but needs refer to the District Disaster Management Center first.¹⁴

However, it is claimed that NSC's decision to lead efforts in dealing with the 2021 flood disaster follows criticism of the lack of response from NADMA. Earlier, a non-governmental organization urged the government to drop the Minister in the Prime Minister's Department (Special Duties), namely Dr. Abdul Latiff Ahmad who heads NADMA for failing to manage major floods in five states. However, during his time in the Dewan Rakyat, he stated that NADMA is not directly involved in dealing with natural disasters such as floods at the state level, instead it only takes care of providing compensation to victims after receiving information and a list from the state.¹⁵ His statement was criticized by the President of the People's Community Organization (Pekemas), namely Faizan Mohd. Nor who stated that the people could not accept his statement regarding NADMA's role as a compensation coordinator when everyone knows that NADMA is responsible for coordinating natural disaster issues. Coordination of compensation is the insurance party's responsibility. President Pekemas asked the government to take this matter seriously because it could damage the Government good name.¹⁶

The Malaysian Democratic Alliance Party (MUDA) information chief Zaidel Baharuddin urged Dr. Abdul Latiff Ahmad to resign and ask him to take responsibility for NADMA's shortcomings in managing humanitarian aid (Zulkarnain & David 2021). Previously, Abdul Latiff Ahmad had stated that NADMA had implemented a post-mortem initiative for the Northeast Monsoon Flood Disaster (MTL) in collaboration with the Disaster Preparedness and Prevention Center (DPPC), Malaysia-Japan International Institute of Technology (MJIT) and Universiti Teknologi Malaysia (UTM) Kuala Lumpur. According to him, cooperation with NGOs and other stakeholders can strengthen the aid and support system when facing large-scale disasters, improve the NGOs ability and capacity, along with strengthen the disaster risk management system.¹⁷

The MAF is alleged to have had act first without the coordination of NADMA in rescue the victims of the 2021 flood who were stranded in the Klang Valley as a result of public anger against NADMA which allegedly failed to deal with a major flood disaster as well as slow and bland actions leading to MAF acting on its own.¹⁸ There is a local portal claims that NADMA is slow in mobilizing the army to help flood victims and claims that the Selangor state government is reluctant to request military assistance for rescuing flood victims. However, the Selangor Menteri Besar, Amirudin Shari, denied the allegations because he did meet the Minister of Defense, Hishammuddin Tun Hussein, and the Prime Minister to ask for military assistance and was aware of his state's capacity.

MUDA's Head of Information stated that there were several newspaper portal reports stating that MAFs were delayed sent to flood disaster at Klang Valley due to NADMA failed in coordinating aid and somewhat reluctant to involve MAFs for unknown reasons. NADMA Director General, Dr.

¹³ *Sinar Harian*. (2021).

¹⁴ *Utusan Online*. (2021).

¹⁵ *Free Malaysia Today*. (2021).

¹⁶ *Utusan Malaysia*. (2021).

¹⁷ *Sinar Harian*. (2022).

¹⁸ *Defence Security*. (2021).

Aminuddin Hassim denied the allegations. He stated that NADMA never prevented the army from carrying out flood relief efforts (Zulkarnain & David, 2021). He has discussed with the Commander of Army General, Zamrose Mohd Zain, where Zamrose also denied issuing a statement that there was a disagreement between NADMA and the army. MAF was among security agencies in the SMART under NADMA. Regarding the alleged lack of coordination by NADMA in dealing with the flood issue that hit Selangor, Dr. Aminuddin stated that the State Secretary held disaster-related meetings and involved all agencies in dealing with disasters where the role of each agency has been fully outlined so that there is no issue regarding lack of coordination among agencies and it is also stated in NSC Directive No. 20.¹⁹

Sahipulhijaiman bin Sulaiman, Deputy Under Secretary (Policy and International Relations), Policy and Strategic Planning Division, MINDEF stated the complaint that NADMA was slow to act which led MAF to act on its own in helping flood victims was related to perception management, which failed to be addressed. MAF itself at certain times fails to manage perception. The perception among MINDEF officers was quite negative and acknowledged by the Minister of Defense openly, which led to negative perception from people on MINDEF.

Following the major floods that hit Shah Alam, Hulu Langat and Klang at Selangor in 2021, Environmental Scientist at Universiti Putra Malaysia, Dr. Haliza Abdul Rahman stated that there is a lack of preparation for floods and flood warnings to the residents of Klang Valley from NADMA, NSC and JPS although the Malaysian Meteorological Department (MetMalaysia) has issued a continuous heavy rain warning in Klang Valley and several other areas, which the government also has a good flood warning system. She recommended that the government use Covid-19 warning system to provide early disasters warning to the public by utilizing social media and short message systems. She also thought that the Government should emulate Japan in facing disasters such as using sirens to warn the public of emergency and conducting emergency drills in offices and schools.²⁰

However, for the 2021 floods in Terengganu and Kelantan, Ismail Sabri Yaakob, through a sharing on Twitter, stated that continuous flood warnings have been issued to flood victims in Terengganu and Kelantan to ensure residents prepare to be evacuated. NADMA, JBPM, RMP and MAF have been deployed for flood victims' evacuation in two states. NADMA was also instructed to ensure that there are enough food kits in PPS and Ministry of Health (MOH) officers are stationed in PPS as a measure to prevent the spread of Covid-19.²¹

The series of 2021 floods resulted in the country suffering a loss of RM6.1 billion. Prime Minister of Malaysia at time, Ismail Sabri Yaakob, stated that the government through NADMA outlined eight strategic steps to improve disaster management. He also suggested that ministries and agencies set aside five percent of management and development expenses for the purpose of disaster management, the creation of main subject in dealing with disasters at various levels of education, an emphasis on the concept of whole society approach that needs to be translated into policy, operations and charity training disasters with the joint involvement of government agencies and Civil Society Organizations (CSOs), as well as the empowerment of local community capacity through community leaders who act as early responders which being supplied with basic equipment and assistance in implementing early actions. KASA was asked to identify permanent PPS and equip it with facilities, upgrade the main river, raise the embankment, and build more flood mitigation. The state government and local authorities are asked to ensure that drainage channels are in good condition and governments to establish a National Numerical Weather Forecast Center.²²

Ismail Sabri Yaakob stated that there are three main challenges facing the country in the management of national flood disasters. Firstly, there is a lack of understanding among central agencies, state, and district levels as well as statutory bodies, private parties and NGOs related to their responsibilities under NSC Directive No. 20 in stages before, during and after the disaster. Second, there is no NADMA office in the state and district which makes it difficult to coordinate directly with agencies on the ground and limits NADMA's ability to coordinate disaster management actions with residents, NGOs, and local governments. The third is information distribution still uses

¹⁹ *BH Online*. (2021).

²⁰ *Malaysia Kini*. (2021).

²¹ *Astro Awani*. (2022).

²² *Malaysia Kini*. (2022).

conventional collection methods where it needs to be improved for quicker and accurately delivery to the response agencies.²³

NADMA also conducts a lot of networking sessions with NGOs to give exposure on their role. Among that organized are Nadma Friends Rejuvenating Workshop 2021 held in Melaka. In addition, NADMA also held a consultation session with *Tenaga Nasional Berhad* (TNB) regarding systems and methods for removing victims from flood areas when the dam is about to burst, as well as Petronas regarding power plans and how to deal with plants affected by floods. NGOs under the Malaysian Chinese Association (MCA) also provide assistance to flood victims through the Red Crescent.²⁴

MINDEF is involved as a front line and has members and assets for this purpose. Some MINDEF assets can be used for war and some unable. MINDEF also sent officials to Japan to see the country's methods of dealing with disasters. Japan plays a big role in dealing with natural disasters and has enough equipment. In Indonesia, there are earthquakes and tsunamis every week. Due to that, the military does play a big role in Indonesia. In Malaysia, natural disasters are not MINDEF main responsibility and it is an additional task to support other agencies. Hence, when a natural disaster occurs in the country, APM is the responsible agency, where they are civilians who deal with defense issues. The act does not allow military personnel to perform within the country and it is usually handled by the national guard which consists of half military and half civilians, or volunteer. However, in situations where agencies are unable to deal with it, MINDEF/MAF will come forward. MINDEF empowers MAFs to perform their own role. Thus, other agencies such as NADMA and APM need to be empowered, so that MAF does not have to deal with it constantly and can focus on its main role (defense).²⁵

4.3 NGO perception

Social activist Wan Zain Syed Mohdzar stated that government agencies should immediately help flood victims in PPS in terms of food aid. This is due to flood victims in Bintulu, Sarawak complained that they did not receive aid and attention from the responsible party. The assistance announced by Najib Tun Razak of RM500, also did not reach the flood victims in Sarawak. He stated that donation funds delivery should be transparent without bureaucracy and flood victims in Sarawak should also be provided with insurance facilities, the same as given to East Coast flood victims. He is of the view that the responsible ministry needs to go down the field and not wait for instructions from the superiors before acting. He praised the Bintulu MPs act who immediately went to field identify the needs of flood victims in several villages affected by flooded.²⁶

In addition to aid from the government, NGOs such as *Angkatan Belia Malaysia* (ABIM) also coordinated aid to a total of 20,000 households affected by the 2014 floods in Perak, Terengganu, Pahang, and Kelantan. ABIM has launched the Flood Victim Relief Fund and received donations in the form of food and various necessities from agencies and individuals. ABIM also organized two series of flood volunteer preparation workshops to form a group of trained field volunteers where it was well received and participated among the community of various races who showed the community's concern to help.²⁷

The Malaysian Youth Council (MBM) together with NADMA held a series of networking sessions with NGOs to enable the mobilization of flood aid to be carried out smoothly accordance with Covid-19 Pandemic guidelines. MBM through the National and State Coalition, as well as NGO Volunteers are also directly involved in the post-flood mobilization involving 6 states affected by the flood disaster caused by Northeast Monsoon. This Government-NGO coordination is to ensure that disaster management is carried out more efficiently and effectively to enable a culture of preparedness and achieve 'community resilience'.²⁸

Kamaruddin Kassim, Director of Corporate Division, Yayasan Ikhlas (YI), stated NSC's role in coordination with NGOs is not visible. He once asked an army captain who was stationed at NSC after a major flood in 2014 whether NSC had a database, but the captain said there was none. Then he suggested NSC use the NGO database with NGO capacity because it led to lack of NGOs

²³ Kosmo. (2022).

²⁴ Ishak, H. (2022, July 18). Personal communication [Personal interview].

²⁵ Sulaiman, S. (2023, January 25). Personal communication [Personal interview].

²⁶ Utusan Borneo Online. (2014).

²⁷ ABIM Official Website.

²⁸ MBM Official Website.

guidelines in providing various assistance on the ground when a disaster occurs. It also caused many NGOs enter the disaster area without the level of disaster danger information to hand appropriate preparations.²⁹

According to him, NSC needs to have before, during and after disaster preparations. Not all NGOs can carry out work during a disaster, some only after a disaster due to not all NGOs are trained. NSC should look at the expertise, list, and facilities that NGOs have. NSC should also have a database on these matters so that when a disaster occurs, NSC can determine which NGO can be called to provide aid and operate during the disaster. What is discussed during a meeting is often not the same as what happens during a disaster. Disaster management in NSC needs to be comprehensive. Details of NGO roles must be included in NSC Directive No. 20 by the NSC.

Kamaruddin stated that during the major flood disaster in 2014, MAF facilities and manpower were fully utilized. At times, lives were in danger, but it was necessary to provide aid due to the unexpected flood. Assets that existed were only war assets. There was a lack of coordination and caused NGOs to be unclear of their function and to whom the aid should be delivered. It also happened where there was a pile of clothes and a disorganized police station.

Therefore, he felt that NSC needs to start being aware that there is a risk where government agencies may collapse one day. An example was during the big flood in 2014 where there was no electricity and the NGOs used whatever they had, and the logistics were also brought by the NGOs themselves. NGOs have also brought 40 four-wheel drive cars and their own clean water. If there are other NGOs that enter the disaster area where there is no water supply, they are unable to communicate and do anything. He believes that it is a loss when NSC does not optimize the facilities available from NGOs because it is easier if government can coordinate it. He stated they operate under APM as well.

According to him, the aid would go smoothly if there was coordination from the NSC. Besides, NGOs confused of NSC and NADMA role which need explanation. NSC also needs to divide NGOs according to clusters, especially to those who can help. Therefore, it will be very beneficial to the government if NSC can coordinate it well. His experience in providing aid during the flood of 2014, he saw that government agencies had used resources to their full capacity but still could not meet the large scale of disaster needs.

YI uses assistant through friends who are known by bringing four-wheel drive vehicle to go impassable places and using boats. YI went to all places that cannot be passed at time. When there is no coordination from NSC, YI will use their own capacity. YI established the Community Economic Development Assistance Corporation (CEDAC) for better aid management. The flood events of 2014 which caused by the yellow flood and Covid-19 Pandemic showed the great role played by YI. If the government does not pay attention to this matter, it will cause losses to the government.

YI has as many as 5000 active volunteers, of which 200 are ready to be directed for assistant at the field any time. But if the government can train these 5000 volunteers to communicate and act during a disaster, it will be beneficial to the government because they can be utilized when a disaster occurs. Most of the volunteers are not trained in the current situation. There is the case where the disaster sites ended up being a relaxation place when there were no instructions and guidance given. The government should also facilitate and give some incentives to NGOs as encouragement. Although YI is under CEDAC, but the government needs to consider optimizing the available facilities and huge disadvantageous for not take those opportunity.

He concluded that during the flood of 2014, no coordination was seen. Due to that, the YI NGO together with University of Putra Malaysia has prepared three (3) proposal papers to improve disaster management to be sent at Prime Minister's Office but no response has been received. Therefore, he felt the government through NSC's involvement was not fulfilled.

CONCLUSION

It is concluded that natural disasters (floods) have caused hundreds of million losses to the country. The 2021 flood alone has caused the country to suffer a loss of RM6.1 billion. This matter indirectly affects the national economy. Based on the people and private sector perception, the crisis of natural disasters (floods) has led to the destruction of large-scale property including business goods, residents are forced to pay higher house building costs and provide resources such as food,

²⁹ Kassim, K. (2023, February 2). Personal communication [Personal interview].

drinks, boats etc., severe destruction of public infrastructure which led the government to bear losses, the poor people have to bear the cost of assets damage and destruction, as well as for the flood mitigation purposes, discomfort at the PPS due to insufficient food and poor infrastructure such as incomplete/suitable and residents had to change jobs from working in the village as fishermen, farmers and ranchers to construction labor and traders. The private sector, namely Petronas, has spent a lot of money to help flood victims through a donation of RM25 million, collecting donations, provides a mobile refueling truck service, and serve customers/rescue operations where gas stations are closed or inaccessible. Other private parties also contributed as much as RM50.8 million to help deal with floods and post-flood recovery.

From the Government's perception, Government agencies have spent a lot of money to help flood victims. Among the assistance provided are rescue operations and the relocation of flood victims, the placement of government assets throughout the state according to zones, the delivery of food supplies despite bad weather and the use of helicopters, the establishment of a single agency that focuses on dealing with natural disasters including floods, assistance to flood victims which reaches RM61,000 for one family, help with basic needs by establishing a Public Donation Reception Center at Government premises, help cleaning areas and houses, introduced an insurance protection scheme for flood victims in areas at risk of being hit, the establishment of Ops Murni to help flood victims, donations in the form of daily necessities and generators, increased logistics, an allocation of RM100 million for post-flood recovery activities, gratuity of RM1,000 for each affected household head, a loan of RM5,000 through BSN to affected traders, exemption from business premises rental fees, flood recovery loan facilities with an allocation of RM30 million, emergency aid for affected cooperatives reaching RM30,000, a directive to the KASA through JPS to move 20 mobile pump assets at affected areas, setting five percent of operating and development expenses for disaster management purposes, equipping PPS with facilities, upgrading main rivers, raising embankments and building more flood mitigation.

From the NGOs perception, NGOs also release a large budget to help flood victims. Among them are organizing flood volunteer preparation workshops, bringing as many as 40 four-wheel drive cars and clean water to help flood victims in PPS, the establishment of CEDAC and the preparation of proposal papers to improve disaster management, providing donations in the form of food and various needs, as well as launching the Flood Victims Relief Fund.

It is concluded that the crisis of natural disasters (floods) has had a profound effect on the national economy when the country suffers very high losses, the people also suffer losses due to the destruction of properties that are submerged in floods including having to spend for flood mitigation. The government, private sector and NGOs also spend loads of money to help flood victims. Likewise, there is cooperation from all parties in dealing with flood disasters crisis, to stabilize the people and country, for the common good.

ACKNOWLEDGEMENT


The authors express their appreciation to the Centre For History, Politics and International Affairs, Faculty of Social Sciences & Humanities, Universiti Kebangsaan Malaysia and Russian Law Journal for this publication. Appreciation also to the top management and senior officials from the National Security Council (NSC), Ministry of Defense (MINDEF) and NGOs (Yayasan Ikhlas) who are willing to be interviewed in assist the additional and verification information for the purpose of this article.

REFERENCES

- [1] Abd Razid, M. A. (January 2, 2015). *Pengurusan banjir NSC setaraf antarabangsa*. BH Online. <https://www.bharian.com.my/taxonomy/term/61/2015/01/26679/pengurusan-banjir-NSC-setaraf-antarabangsa>
- [2] ABIM. *Banjir: ABIM Lancar Tabung Bantuan Bencana*. <https://www.abim.org.my/banjir-abim-lancar-tabung-bantuan-bencana/>
- [3] Ahmad, M. A. F. (2017, October 8). *Pengurusan bencana perlu sistematik-Shahidan*. BH Online. <https://www.bharian.com.my/berita/nasional/2017/10/334765/pengurusan-bencana-perlu-sistematik-shahidan>
- [4] Akhir, N. M., Azman, A., Hassan, N., & Akhir, N. H. (2017). *Kajian Penelitian Masalah Mangsa Bencana Banjir Disember 2014 Di Kelantan*. *e-BANGI Journal*, 12(3).

- [5] Ali, F. S. (2021, December 23). *Banjir: NSC arah seluruh jentera kerajaan bersiap siaga*. Sinar Harian. <https://www.sinarharian.com.my/article/179509/BERITA/Nasional/Banjir-NSC-arrah-seluruh-jentera-kerajaan-bersiap-siaga>
- [6] Anua, N., Tan, M. L., & Chan, N. W. (2021). *Daya tahan komuniti menghadapi banjir 2014: Kajian kes di Kampung Manek Urai Lama, Kuala Krai, Kelantan*. *Geografia Malaysian Journal of Society and Space*, 17(1), 196-210.
- [7] Anuar, A. R., Mohd Jali, M. R., & Ahmad, S. A. (2010). *Mitigasi bencana banjir di Malaysia: Inisiatif mitigasi dalam kalangan golongan miskin*.
- [8] Astro Awani. (2015, September 2). *Kerajaan tubuhkan Agensi Pengurusan Bencana Negara - Shahidan*. <https://www.astroawani.com/berita-malaysia/kerajaan-tubuhkan-agensi-pengurusan-bencana-negara-shahidan-72001>
- [9] Azman, A. R., & Ismail, N. (2016). *Persepsi mangsa banjir terhadap pengurusan pengagihan sumbangan bencana banjir*.
- [10] Bernama. (2021, December 22). *Banjir: Pengurusan bencana berbeza ikut lokasi, situasi - NSC*. <https://www.astroawani.com/berita-malaysia/banjir-pengurusan-bencana-berbeza-ikut-lokasi-situasi-NSC-337771>
- [11] BH Online. (2016, January 3). *Kabinet bincang perkenal skim insurans mangsa banjir - Shahidan*. <https://www.bharian.com.my/berita/nasional/2016/01/110700/kabinet-bincang-perkenal-skim-insurans-mangsa-banjir-shahidan>
- [12] BH Online. (2021, December 20). *PETRONAS sumbang RM25 juta misi bantuan banjir*. <https://www.bharian.com.my/bisnes/lain-lain/2021/12/901533/petronas-sumbang-rm25-juta-misi-bantuan-banjir>
- [13] Buslima, F. S., Omar, R. C., Jamaluddin, T. A., & Taha, H. (2018). *Flood and flash flood geo-hazards in Malaysia*. *Int. J. Eng. Technol*, 7(4), 760-764.
- [14] Defence Security Asia. (2021, December 21). *ATM Terpaksa "Lupakan" NADMA Kerana Didakwa Gagal Tangani Banjir, Bantu Mangsa*. <https://defencesecurityasia.com/atm-nadma-banjir-gagal/>
- [15] Department of Statistics Malaysia. (2021). *Bencana Banjir Temerloh*.
- [16] E. Ite, U. (2004). *Multinationals and corporate social responsibility in developing countries: a case study of Nigeria*. *Corporate Social Responsibility and Environmental Management*, 11(1), 1-11.
- [17] FMT Reporters. (2021, December 20). *NSC ketua usaha bantuan banjir selepas NADMA dikritik*. FMT. <https://www.freemalaysiatoday.com/category/bahasa/tempatan/2021/12/20/NSC-ketua-usaha-bantuan-banjir-selepas-nadma-dikritik/>
- [18] FMT Reporters. (2022, January 5). *Umno dukacita, mahu sidang khas Parlimen bincang isu banjir, kata Zahid*. FMT. <https://www.freemalaysiatoday.com/category/bahasa/tempatan/2022/01/05/umno-dukacita-mahu-sidang-khas-parlimen-bincang-isu-banjir-kata-zahid/>
- [19] Hairom, N. (2022, February 17). *Nadma lakukan 'post-mortem' bencana banjir*. Sinar Harian. <https://www.sinarharian.com.my/article/188363/BERITA/Nasional/Nadma-lakukan-post-mortem-bencana-banjir>
- [20] Hamzah, A. (2010). *"Kaedah Kualitatif dalam Penyelidikan Sosio-Budaya" dalam Jurnal Pengajian Media Malaysia*. Kuala Lumpur: UM.
- [21] Hapsari, R. I., & Zenurianto, M. (2016). *View of flood disaster management in Indonesia and the key solutions*. *American Journal of Engineering Research*, 5(3), 140-151.
- [22] Hua, A. K. (2019). *Keberkesanan Faktor Dalam Menghadapi Bencana Banjir Monsun di Kota Bharu, Kelantan. Satu Kajian Kes Berasaskan Persepsi Penduduk*. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 4(1), 22-28.
- [23] Hussain, T. P. R. S., Mohamed, B., & Ismail, H. (2015). *Kesediaan diri anggota masyarakat daripada perspektif psikologi berkaitan bencana banjir di Daerah Segamat*. *Journal of Techno-Social*, 7(2).
- [24] Ishak, H. (2022, July 18). *Personal communication [Personal interview]*.
- [25] Jafar, A., Mapa, M. T., & Sakke, N. (2012). *Impak aktiviti pembangunan terhadap trend kekerapan dan magnitud banjir di Lembangan Sungai Menggatal, Kota Kinabalu, Sabah*. *Jurnal Kinabalu*, 18.
- [26] Jasmi, K. A. (2012). *Metodologi pengumpulan data dalam penyelidikan kualitatif*. *Kursus Penyelidikan Kualitatif Siri*, 1(2012), 28-29.
- [27] Kassim, K. (2023, February 2). *Personal communication [Personal interview]*.
- [28] Khalid, M. S., Anuar, A. R., & Mohd Jalil, M. R. (2010). *Sistem pengurusan bencana di Malaysia: kajian kes banjir*.
- [29] Majlis Belia Malaysia (MBM) Official Website

- [30] *MalaysiaKini*. (2022, February 4). PM: Lapan langkah strategik tambah baik pengurusan bencana negara. <https://www.malaysiakini.com/news/609476>
- [31] Md Zain, R. (2021, December 21). NADMA nafi halang ATM laksana operasi banjir. *BH Online*. <https://www.bharian.com.my/berita/nasional/2021/12/902290/nadma-nafi-halang-atm-laksana-operasi-banjir>
- [32] Ministry of Defence Official Website. (2014, December 29). Meninjau Kesiapsiagaan ATM & Membantu Mangsa Banjir Melalui Ops Murni.
- [33] Ministry of Home Affairs Official Website. (2015). Misi Bantuan Kemanusiaan Dan Kemasyarakatan. <https://www.moha.gov.my/index.php/ms/berita-kdn/2036-misi-bantuan-kemanusiaan-dan-kemasyarakatan>
- [34] Moe, I. R., Kure, S., Januriyadi, N. F., Farid, M., Udo, K., Kazama, S., & Koshimura, S. (2016). Effect of land subsidence on flood inundation in Jakarta, Indonesia. *土木学会論文集 G (環境)*, 72(5), I_283-I_289.
- [35] *mStar*. (2014, December 25). Kerajaan Pastikan Usaha Terbaik Bantu Mangsa Banjir - PM. <https://www.mstar.com.my/lokal/semasa/2014/12/25/najib-banjir>
- [36] Muslim, N. (2021, December 22). Pakar: Di mana Nadma, NSC saat banjir Lembah Klang? *MalaysiaKini*. <https://www.malaysiakini.com/news/604150>
- [37] Nakamura, I., & Llasat, M. C. (2017). Policy and systems of flood risk management: a comparative study between Japan and Spain. *Natural Hazards*, 87, 919-943.
- [38] National Disaster Management Agency (NADMA) Official Website
- [39] Nonomura, A., Fujisawa, K., Takahashi, M., Matsumoto, H., & Hasegawa, S. (2020). Analysis of the actions and motivations of a community during the 2017 torrential rains in northern Kyushu, Japan. *International Journal of Environmental Research and Public Health*, 17(7), 2424.
- [40] Park, J., & Chung, E. (2021). Learning from past pandemic governance: Early response and Public-Private Partnerships in testing of COVID-19 in South Korea. *World Development*, 137, 105198.
- [41] Rameli, N. L. F., Mohamed, A. F., Mohamad, S., Ismail, M. K., Shafie, S. H. M., & Abdullah, R. (2019). Persepsi Penduduk Terhadap Banjir Monsun: Kajian Kes Temerloh Pahang, Malaysia. *Journal of Management and Operation Research*, 1(8).
- [42] Roslan, M. R. (2022, January 20). Tiga cabaran dikenal pasti urus bencana banjir- Perdana Menteri. *Kosmo*. <https://www.kosmo.com.my/2022/01/20/tiga-cabaran-dikenal-pasti-urus-bencana-banjir-perdana-menteri/>
- [43] Ramayah, U. (2022, February 27). NADMA, agensi penyelamat dikerah bantu mangsa banjir - PM. *Astro Awani*. <https://www.astroawani.com/berita-malaysia/nadma-agensi-penyelamat-dikerah-bantu-mangsa-banjir-pm-348977>
- [44] Said, M. S., & Suhaimi, S. A. (2015). Kesan bencana banjir ke atas aktiviti perniagaan di Bandar Lama Gua Musang.
- [45] Said, M. Z., & Gapor, S. A. (2013). Menangani masalah banjir di Daerah Padang Terap, Kedah: Analisis persepsi dan tindakan pemimpin masyarakat tempatan (*Managing flooding in the District of Padang Terap, Kedah: A perception and response analysis of local community leaders*). *Geografia*, 9(4).
- [46] See, K. L., Nayan, N., Mahat, H., Hashim, M., Saleh, Y., Rahaman, Z. A., & Taleha, N. A. (2017). Tahap Persediaan dan Kerugian Para Peniaga Ketika Banjir Ekstrem 2014: Kajian Kes Bandar Kuala Krai, Kelantan: Preparedness and Losses Level of Traders during Extreme Flood 2014: A case study of Bandar Kuala Krai, Kelantan. *Geografi*, 5(2), 39-48.
- [47] Sheikh Rahim, M. (2021, December 20). NADMA gagal urus banjir? *Utusan Malaysia*. <https://www.utusan.com.my/terkini/2021/12/nadma-gagal-urus-banjir/>
- [48] Sheikh Rahim, M. (2021, December 20). Semua arahan tindakan perlu dari NSC - PM. *Utusan Malaysia*. <https://www.utusan.com.my/berita/2021/12/semua-arahan-tindakan-perlu-dari-NSC-pm/>
- [49] Sulaiman, S. (2023, January 25). Personal communication [Personal interview].
- [50] Syed Hussain, T. P. R., Ismail, H., Md Noh, M. K., & Yusof, R. (2015). Kemudahterancaman penduduk terhadap bencana alam kesan perubahan gunatanah di beberapa daerah negeri Kedah.
- [51] Takao, K., Motoyoshi, T., Sato, T., Fukuzondo, T., Seo, K., & Ikeda, S. (2004). Factors determining residents' preparedness for floods in modern megalopolises: the case of the Tokai flood disaster in Japan. *Journal of Risk Research*, 7(7-8), 775-787.
- [52] Temrin, S. N. A., & Awang, A. (2017). Bencana Banjir dan Tahap Pengetahuan Penduduk Terhadap Pengurusan Banjir di Serian Sarawak. *Malaysian Journal of Society and Space*, 13(4), 22-36.

- 
- [53] *The Malaysian Insider*. (2014, December 26). Putrajaya akui kelemahan bantu mangsa banjir walaupun cukup bersedia. <https://malaysia.news.yahoo.com/putrajaya-akui-kelemahan-bantu-mangsa-banjir-walaupun-cukup-042030646.html?guccounter=2>
- [54] Udori, A., & Miranti, M. (2019). Upaya Badan Penanggulangan Bencana Daerah (BPBD) dalam penanggulangan bencana banjir. *Jurnal Politik dan Pemerintahan Daerah*, 1(2), 85-94.
- [55] *Utusan Borneo Online*. (2014, January 2). Segerakan bantuan kepada mangsa banjir. <https://www.utusanborneo.com.my/2014/01/02/segerakan-bantuan-kepada-mangsa-banjir>
- [56] Wells, J. A., Wilson, K. A., Abram, N. K., Nunn, M., Gaveau, D. L., Runting, R. K., ... & Meijaard, E. (2016). Rising floodwaters: mapping impacts and perceptions of flooding in Indonesian Borneo. *Environmental Research Letters*, 11(6), 064016.
- [57] Yusoff, S., & Aziz, R. A. Bencana Alam dan Impak Banjir Besar 2014 Terhadap Komuniti Tempatan di Hulu Dungun, Terengganu: Satu Perspektif Sosiologi Bencana. *Sumber 25*: 500-000.
- [58] Zaini, A. H. (2020). Keberkesanan Koordinasi Agensi Kerajaan dan Isu Pemerdagangan Orang: Kajian Empirik Organisasi Jenayah Terancang Dalam Industri Eksploitasi Seksual. [Master dissertation, National University of Malaysia].
- [59] Zal, W. A. (2018). Ketahanan Komuniti Mangsa Bencana Banjir Di Pantai Timur Semenanjung Malaysia Dalam Konteks Modal Komuniti [Community Resilience Among Flood Victims in The East Coast of Peninsular Malaysia in The Context of Community Capitals]. *Journal of Nusantara Studies (JONUS)*, 3(2), 41-53.
- [60] Zulkarnain, I., & David, N. (2021, December 21). Perdana Menteri Akui Kepincangan Dalam Perlaksanaan Misi Selamat Mangsa Banjir. *Benar News*. <https://www.benarnews.org/malay/berita/my-pm-banjir-pincang-211221-12212021141712.html>