


COUNTRY REPORT

MALAYSIA

CHE SITI NOOR BINTI CHE MAMAT
NATIONAL DISASTER MANAGEMENT AGENCY (NADMA)

VISITING RESEARCHER PROGRAM FY2024

ASIAN DISASTER REDUCTION CENTRE

1.0 INTRODUCTION

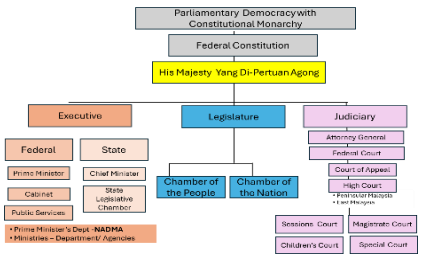
Malaysia is located in Southeast Asia, divided into two regions: Peninsular Malaysia (West Malaysia) and East Malaysia, which is located on the island of Borneo. It is bordered by Thailand, Singapore, Indonesia, and Brunei and has a coastline along the South China Sea and the Strait of Malacca. Malaysia is a federal constitutional monarchy and consists of thirteen States and three Federal Territories.

In terms of economic profile, Malaysia has a diverse, upper-middle-income economy, with a combination of industries like manufacturing, agriculture, services, and natural resources. Key industries namely palm oil, rubber, timber, oil and gas, electronics, automotive, and tourism.

Malaysia has great cultural diversity with its varied ethnic makeup of Malays, Chinese, Indians, and indigenous tribes. Malaysia has 80 ethnicities altogether. Out of 34.1 million population currently, ethnic groups in Malaysia include Bumiputera (69.4%) (Malays, Orang Asli (indigenous peoples) and Sabah and Sarawak native), Chinese (23.2%), Indian (6.7%), other (0.7%), and non-citizens (10.3%). Non-citizen counted at 2.69million. The official language is Bahasa Malaysia, though English is widely spoken, and many Malaysians are multilingual, also speaking Chinese dialects and Tamil.

Counted at 16.9 million (52.3%), there are 110 males for every 100 females. (15.5 million /47.7%). The population growth in 2024 is at 2.0% and it is gradually increased compared to 1.7% in 2020. Regarding the age distribution, Malaysia has 26.4% children 0-14 years old, 68.3% working age 15-64 years old and 5.3% elderly people above 65 years old[1].

Islam is the official religion, but Malaysia is known for its cultural and religious diversity, including Buddhism, Christianity, Hinduism, and other faiths The census by the Malaysian government in 2020, 63.5% of the population practices Islam; 18.7% Buddhism; 9.1% Christianity; 6.1% Hinduism; 1.8% is atheist; and 0.9% belong to other religious groups.



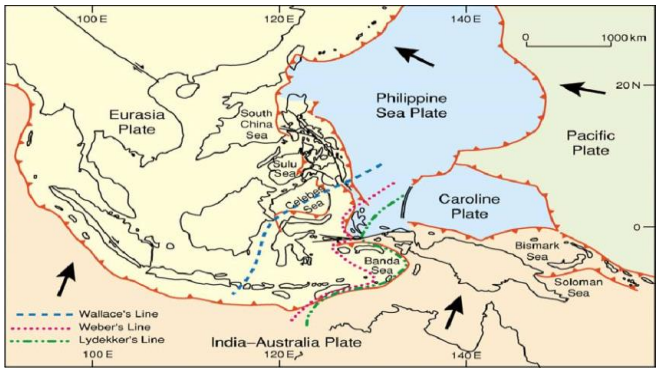
Malaysia practices Parliamentary Democracy with Constitutional Monarchy and His Majesty The King as the Paramount Ruler. The Federal Constitution was legislated with the setting up of conditions for this system to exist. One of the characteristics of Parliament Democracy is the separation of powers into three parts which are the Legislative, the Judiciary and the Executive. His Majesty The King has the power to safeguard the customs and traditions of the Malay people and the Highest Commander of the Armed Forces. He carries out his duties under the Constitution under the advice of the Prime Minister and the Cabinet.

[1] Malaysia Consensus 2020, Department of Statistics.

2.0 DISASTER PROFILE

Malaysia is considered as non-disaster prone-country. It relatively safe from large-scale geological hazards such as earthquakes and tsunamis generated at subduction zones and typhoons.

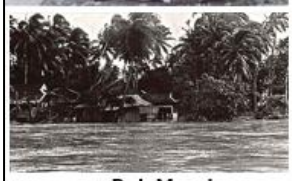
However, it is more exposed to climate-related hazards, namely floods, landslides, storms and other.



2.1 Flood

Malaysia enjoys a tropical climate with a uniform temperature range between 21°C and 32°C. The average annual rainfall is about 2,500 mm, with 60% of this rainfall occurring from November to January. Malaysia experiences two distinct monsoons: the North-East Monsoon, which lasts from November to March, and the South-West Monsoon, which occurs from June to August. Between these monsoons, there are two inter-monsoon periods. The North-East Monsoon is particularly known for causing annual flooding events, especially in the northeast part of Peninsular Malaysia, affecting states like Kelantan, Terengganu, Pahang, and Johor. Some significant large-scale flooding events have been recorded, including:

1926



Bah Merah

(The Red- Flood)

Occurred at the end of 1926, affecting almost the entire Peninsular Malaysia affecting estimation of 250,000 people

1971

Kuala Lumpur Flood

Kuala Lumpur was struck by a massive flood that crippled nearly 50% of the city. This event led the government to declare a National Flood Emergency, announced by the then Prime Minister, YAB Tun Abdul Razak. The states of Pahang, Selangor, and Johor were also impacted, with an estimated 180,000 people affected

2014

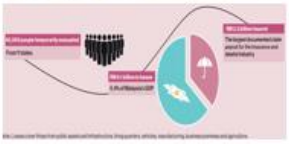
Bah Kuning

(The Yellow-Flood)

IMPACT:
541,896 flood victims;
319,156 (58.9%) in Kelantan
2,076 homes destroyed
6,698 homes damaged
1,335 evacuation centres
25 flood-related deaths; 11 in Kelantan
RM 2.85 billion in public property loss (not including personal and private properties)

NADMA was established

2021



Flooding event of 17 December 2021, the worst affected was State of Selangor with such a big scale disaster happened at the urban area. 58 casualties were recorded marked as the highest mortality in the history of Malaysia due to the flooding. Damage and losses were estimated at RM6.1 billion.

A comparison of the impacts from North-East Monsoon flooding events between 2015 and 2022 shows that, while the frequency of flood disasters has been high, the overall impact has been relatively low. However, there has been an increase in the number of internally displaced persons.

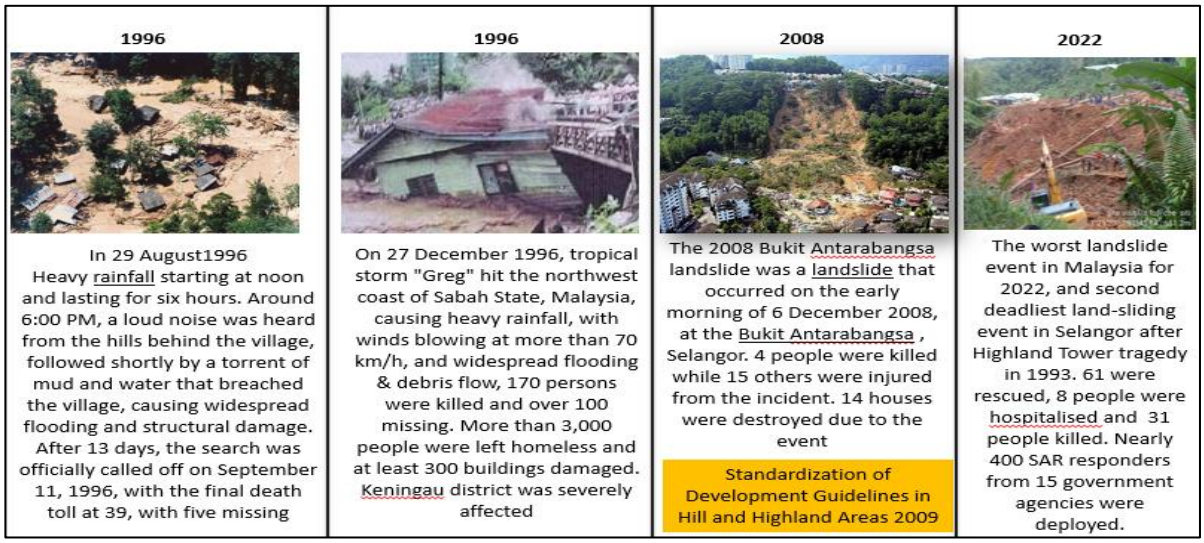
ITEMS	NORTHEAST MONSOON SEASON/YEAR						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
IDPs	23,272	110,207	63,090	11,036	55,187	128,315	138,916
Families	6,159	31,433	19,881	3,128	17,173	34,251	38,849
Death	-	-	-	-	-	156	57
Evacuation Centres	147	975	516	133	510	1,176	1,100
State	12	11	14	12	9	13	12
Government Spending (RM million)	3.1	15.7	9.9	1.6	8.6	79.8	255
Population Affected (%)	0.08%	0.34%	0.19%	0.03%	0.17%	0.33%	0.42%

Source: National Disaster Management Agency, 2022

In the recent flooding event that occurred on December 1, 2024, 37 districts across 9 states were inundated, resulting in the evacuation of 153,411 people from 45,647 families to 686 temporary evacuation centres. Four deaths were reported, and infrastructure damage included 159 education facilities, 81 health facilities, and 273 roads.

2.2 Landslide

Malaysia is also vulnerable to rainfall-induced landslides, especially in hilly or mountainous areas. These occur predominantly during periods of heavy rainfall, which is common during the monsoon seasons. Landslides pose a significant risk to both lives and infrastructure, with historical data showing that landslides have contribute to the highest number of fatalities due to natural disasters in the country.



Hilly areas, including tourist spots such as Cameron Highlands in Pahang, Kundasang in Sabah, and the Klang Valley in Kuala Lumpur, are at high risk of landslides.

In 2023, five Myanmar foreign workers were killed when a house at a Cameron Highlands vegetable farm collapsed due to a landslide. At the end of 2024, two teenagers were killed and one survived when their house was struck by a landslide during heavy rainfall in Terengganu.

On January 27, 2025, a landslide occurred in Miri, Sarawak, resulting in the tragic loss of five lives and leaving one person injured. Despite the area being identified as landslide-prone since 2009, with recommendations for relocation, no mitigation measures or further actions were taken, which ultimately led to the collapse.

2.3 Earthquake

Malaysia is not situated along major tectonic plate boundaries, but it experiences occasional earthquakes of low to moderate intensity, primarily in the state of Sabah. Two significant earthquakes generated by the movement of local active faults were recorded: one in 1976 in Lahad Datu, on the east coast of Sabah, with a magnitude of 6.3, and another in 2015, when a 6.0 magnitude earthquake struck near Mount Kinabalu. The 2015 earthquake resulted in 18 fatalities and caused significant damage to buildings and infrastructure.

2.4 Tsunami

On December 26, 2004, a magnitude 9.1 earthquake struck off the coast of Aceh, Indonesia, generating a powerful tsunami wave in the Indian Ocean. The wave swept

into the Malacca Strait and affected the northwestern coastal areas of Peninsular Malaysia. Prior to this, Malaysia had never experienced a tsunami. The transboundary disaster resulted in 68 deaths and an estimated loss of USD 3.4 million. This event marked a turning point for Malaysia in addressing tsunami risks, leading to significant measures in prevention and preparedness. These efforts included strengthening the institutional framework for the national tsunami monitoring and early warning centre, improving inter-agency coordination, conducting training and capacity-building programs, raising community awareness, and promoting resilient recovery and "building back better."

2.5 Pandemic COVID-19

COVID-19 pandemic is the greatest communicable disease outbreak to have hit Malaysia. In 1999, the Nipah virus outbreak killed 105 Malaysians, while the SARS outbreak of 2003 claimed 2 lives. According to Ministry of health, COVID-19 pandemic has claimed 471 lives in 2020, 31,016 lives in 2021 and 5,366 lives in 2022. To contain the epidemic, Malaysia implemented a Movement Control Order (MCO) beginning on March 18 2020 in 4 phases over 2 months, ending on May 1, 2020. Malaysia's COVID-19 case fatality rate is lower than what it is globally; this is due to the successful implementation of early preparedness and planning, the public health and hospital system, comprehensive contact tracing, active case detection, and a strict enhanced MCO.

2.6 Industrial Disasters

Malaysia, like many industrialized nations, has experienced a variety of industrial disasters over the years. These disasters, ranging from chemical spills to factory explosions, have had significant impacts on human health, the environment, and the economy. Below are some notable industrial disasters in Malaysia:

The Bright Sparklers Fireworks factory exploded on May 7, 1991, killing 26 people and injuring 103 others. Over 200 residential properties were damaged, and the tremor was felt as far as 7 km from the site. The incident led to a total ban on fireworks factories and the establishment of the HAZMAT unit within the Fire and Rescue Department.

The collapse of the Highland Towers Condominium in Selangor in 1993 resulted in the deaths of 48 people. This tragedy marked the establishment of the Urban Search and Rescue Team i.e the Special Malaysia Disaster Assistance and Rescue Team (SMART), and the formulation of disaster management guidelines i.e National Directive No. 20: Policy and Mechanism of Disaster Management.

The 2019 Kim Kim River toxic pollution incident that occurred on 7 March 2019 caused by illegal chemical waste dumping at the Kim Kim River in Pasir Gudang, Johor. The illegal dumping released toxic fumes, affecting 6,000 people and hospitalising 2,775. Most of the victims were school students—110 schools located near the river were subsequently closed.

3.0 DISASTER MANAGEMENT IN MALAYSIA

Following the large-scale flooding event on December 25, 2014, the Cabinet decided to establish a new agency for disaster management, transferring the responsibility from the National Security Council (NSC). On October 1, 2015, the National Disaster Management Agency (NADMA) became fully operational under the purview of the Prime Minister's Department (PMD). The establishment of NADMA involved the consolidation of three entities: the Disaster Management Division of the NSC, the Post-Flood Recovery Unit of the PMD, and the Special Malaysia Search and Rescue Team (SMART). NADMA served as the focal point for disaster related matters at national, regional and international level.

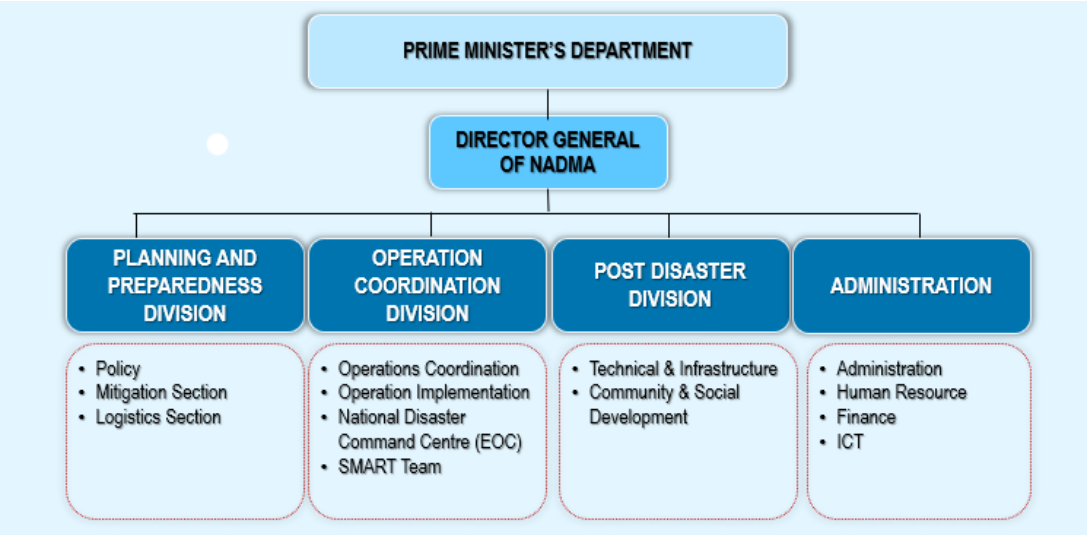


Figure 1: NADMA's Organisation Chart

3.1 RESPONSIBILITY OF NADMA

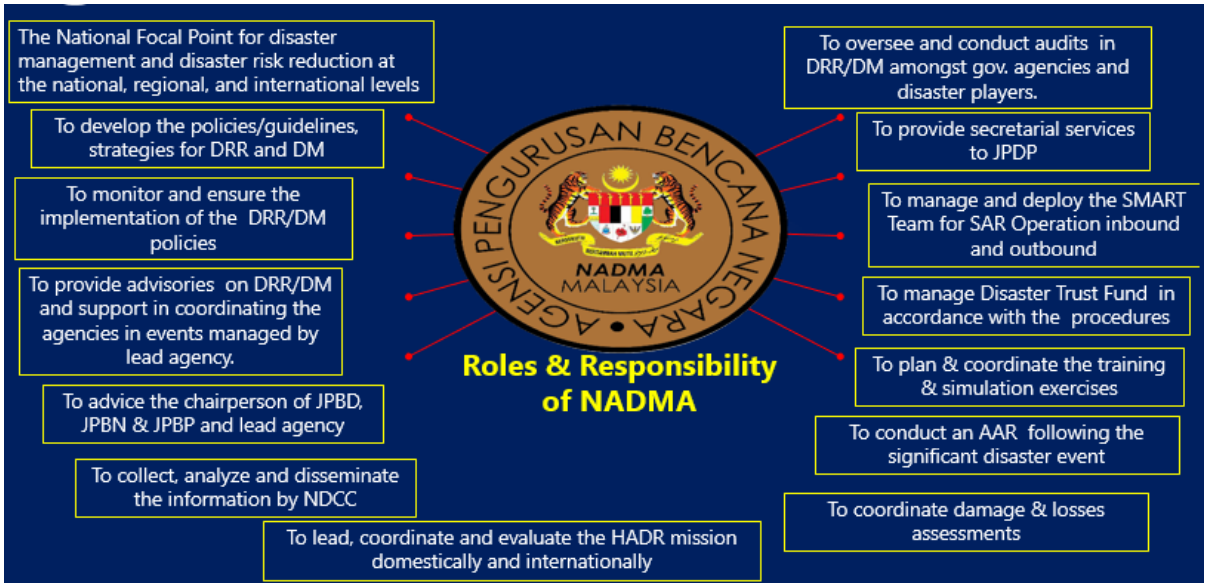


Figure 2: Role of NADMA

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3.2 DISASTER MANAGEMENT SYSTEM

(i) National Disaster Management Agency Directive No.1

The National Disaster Management Agency Directive No. 1 (NADMA No. 1): The Policy and Mechanism for National Disaster and Relief Management is the main guideline for disaster management in Malaysia. The directive prescribes the mechanism for the management of disasters including the responsibilities and functions of related agencies under an integrated emergency management system. This is achieved through the establishment of The Disaster Management and Relief Committee at three different level namely federal, state and district pending the severity of the disaster. At the Federal level, this committee is chaired by the Deputy Prime Minister as appointed by the Prime Minister. The directive is supported by other Standard Operating Procedures which outline the mechanism as well as roles and responsibility of various agencies for specific disasters, i.e. flood; open burning, forest fire, haze, industrial disasters etc.

Figure 3: Types of disasters according to the NADMA Directive No.1

The disaster management structure is divided into two phases: normal times and disaster/emergency operations. During normal times, the Disaster Management Committee at all levels meets at least three times a year to discuss and plan disaster risk reduction and management strategies.

When a disaster strikes, the Disaster Operation Control Centre is immediately activated to monitor the situation and address operational needs, with leadership provided by the Chairman of Disaster Management at the respective level. On the ground, various agencies carry out search and rescue, medical assistance, technical expertise, welfare, safety, security, media management, and other support functions. These ground operations are coordinated by the Royal Malaysia Police Officer, who acts as the on-scene commander, with the Fire and Rescue Officer serving as the deputy commander.

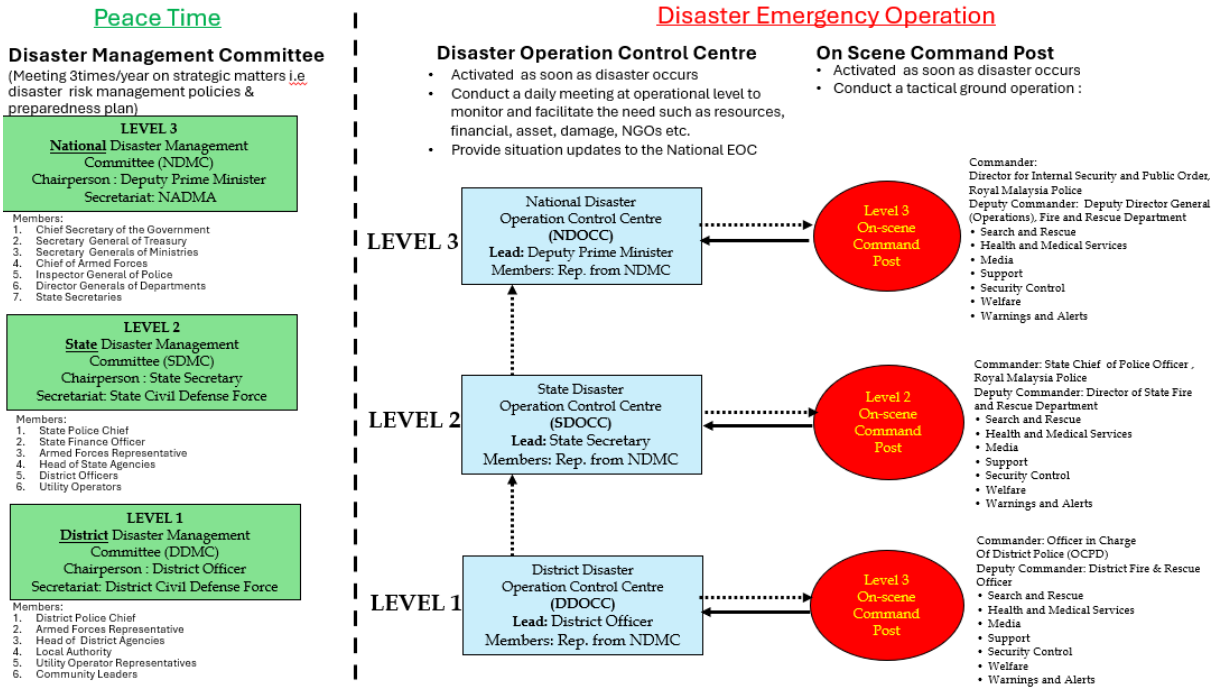


Figure 4: Disaster Management Structure

(ii) National Policy on Disaster Risk Reduction 2030

On October 13, 2024, the Deputy Prime Minister launched the National Policy on Disaster Risk Reduction 2030 in commemoration of the International Day for Disaster Risk Reduction. The formulation of this policy aligns with Target E of the Sendai Framework for Disaster Risk Reduction, which focuses on the development and implementation of national and local DRR strategies.

Regarding disaster risk reduction initiatives, the National Disaster Management Agency (NADMA) plays a key role in mainstreaming DRR and accelerating the implementation of both the Sendai Framework for Disaster Risk Reduction 2015-2030 and the National Policy on DRR. This supports five national priorities for action, which are:

1. Improving the understanding of disaster risk;
2. Strengthening risk governance;
3. Investing in DRR for resilience;
4. Enhancing disaster preparedness and promoting "build-back-better" for rehabilitation and recovery; and
5. Developing capacity and community participation.

Given the increasing frequency of disasters in Malaysia, it is clear that the country may no longer be immune to major disasters. As a result, effective coordination among agencies involved in Disaster Risk Reduction (DRR) is crucial. Planning and mitigation efforts require a thorough understanding of the potential occurrence and impact of disasters. The damage and loss of life and property caused by such events are devastating and are outcomes no country desires.

A well-structured disaster risk reduction plan, along with coordinated efforts and strong commitment from disaster management agencies at all levels and local stakeholders,

can significantly reduce disaster risks, enhance preparedness and response, and minimize damage to assets and loss of life.

To measure the progress of these efforts in Malaysia, the national DRR policy outlines six targets to be achieved by 2030:

1. Substantially reduce the number of people affected by disasters;
2. Reduce direct economic losses caused by disasters;
3. Significantly reduce disaster damage to critical infrastructure and disruptions to essential services;
4. Increase the number of states, districts, and local authorities implementing disaster risk reduction strategies;
5. Enhance international cooperation in disaster risk reduction;
6. Significantly improve access to multi-hazard early warning systems, disaster risk information, and risk assessments for the public.

3.3. CURRENT SITUATION OF PROMOTING OF MAINSTREAMING DRR

In October 2021, NADMA completed a survey, in collaboration with JICA Office in Malaysia to investigate how local stakeholders, such as local government departments and agencies, community-based organizations and members of the local community cope with disasters, and what actions are being taken to build local resilience, including measures responding and recovering from the ongoing COVID-19 pandemic.

The final report of the survey has been submitted and from the findings, several policy recommendations were made including:

1. Strengthen disaster risk governance that would allow cohesive policy implementation, both vertically (national and local levels) and horizontally (across agencies, departments and stakeholder groups);
2. Secure regular and sustainable resources and sustainable funding;
3. Make opportunities for continuous training, learning and knowledge management;
4. Improve data and information management that will allow evidence-based and risk-informed decision-making;
5. Enhance risk and hazard identification, analysis and forecasting abilities; and
6. Improve coordination to avoid institutional overlaps for integrated, efficient and effective actions.

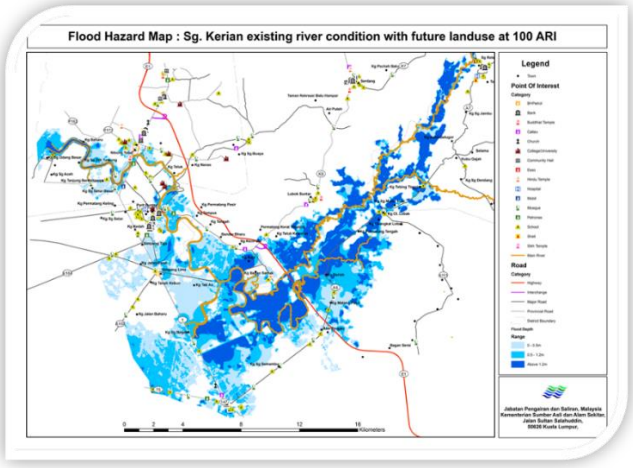
The findings and suggestions from this survey are hoped to advance Malaysia's resilience agenda, also being considered in Malaysia’s National DRR Policy & Strategies at both strategic and implementation stages, and help mainstream the concept of DRRM into all socio-economic development policies, plans, programs, and projects. NADMA as the lead government agency to coordinate DRRM plays an essential role in providing a support system to state and local governments to initiate and materialise their respective resilience agendas.

the coming years, Malaysia is expected to experience more disasters, natural and anthropogenic, especially climate related hazards, and the impacts are anticipated to be severe on local community. To minimise the impacts, Malaysia through DRR focal

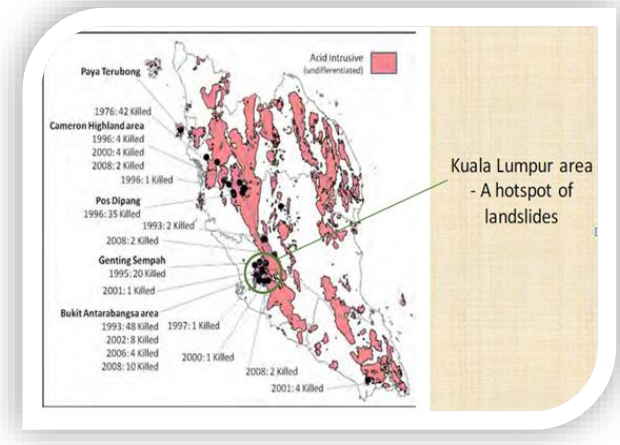
point has mainstreamed the DRR initiatives to the main component sectors such as environment, economic and social vertically with in-line ministries and horizontally from federal level to state and district level.

3.4 CURRENT INITIATIVES IN DRR

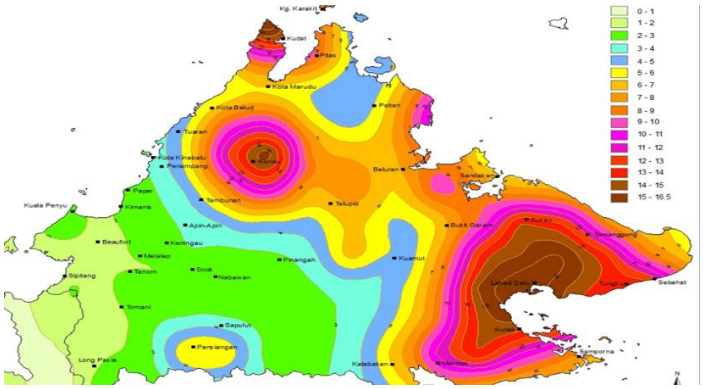
a) Improving the understanding of disaster risks: Development of hazard and risk maps



Flood hazard map developed by Department of Irrigation and Drainage



Landslide hazard and risk map developed by Department of Mineral and Geosciences



Seismic Peak Ground Acceleration (PGA) map developed by Department of Mineral & Geosciences

b) Strengthen the risk governance – Enhance the coordination and cooperation

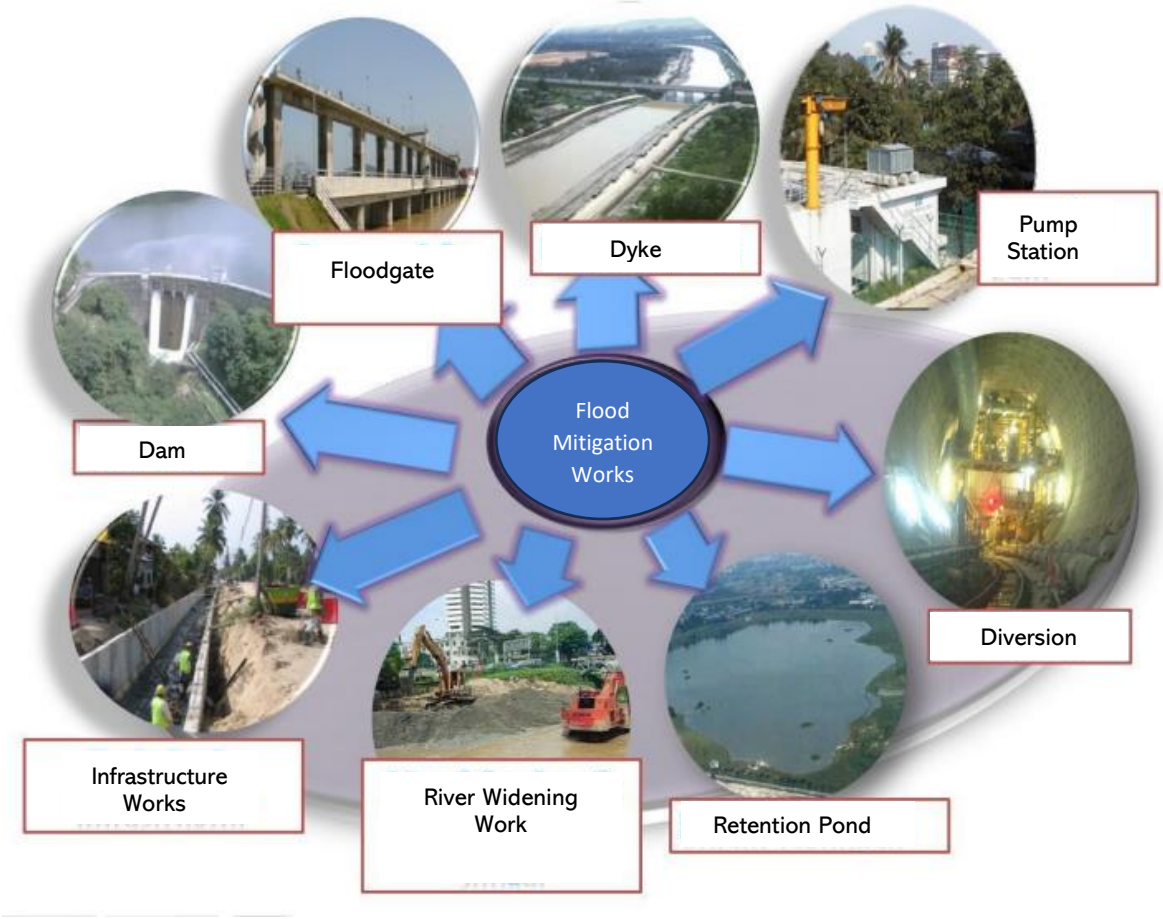
Disaster Management Meeting with the Prime Minister

Enhance the coordination and cooperation between disaster players

Workshop for strengthening the SOPs in disaster risk reduction, management and operations

c) Investing in DRR for resilience: Hard and Soft Mitigation Measures

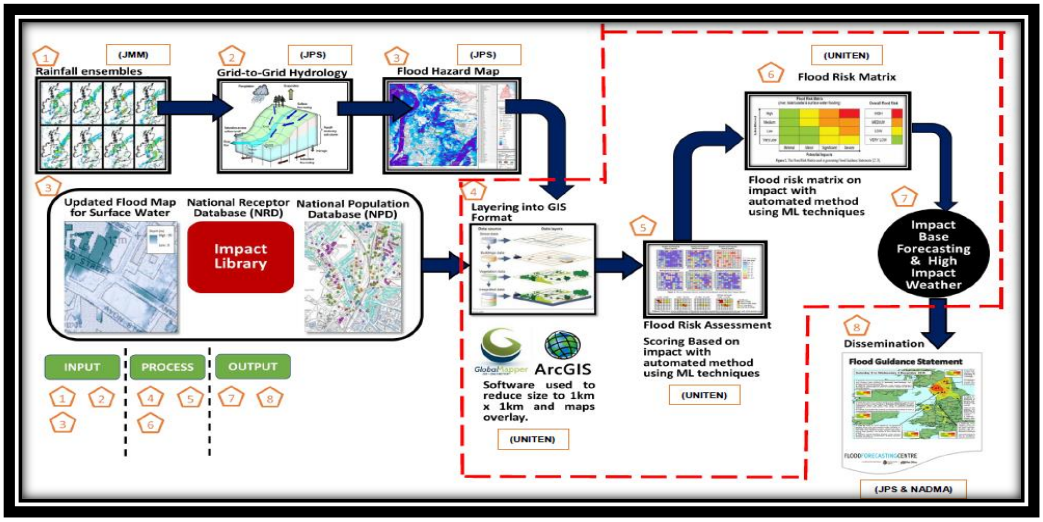
(i) Flood Countermeasures



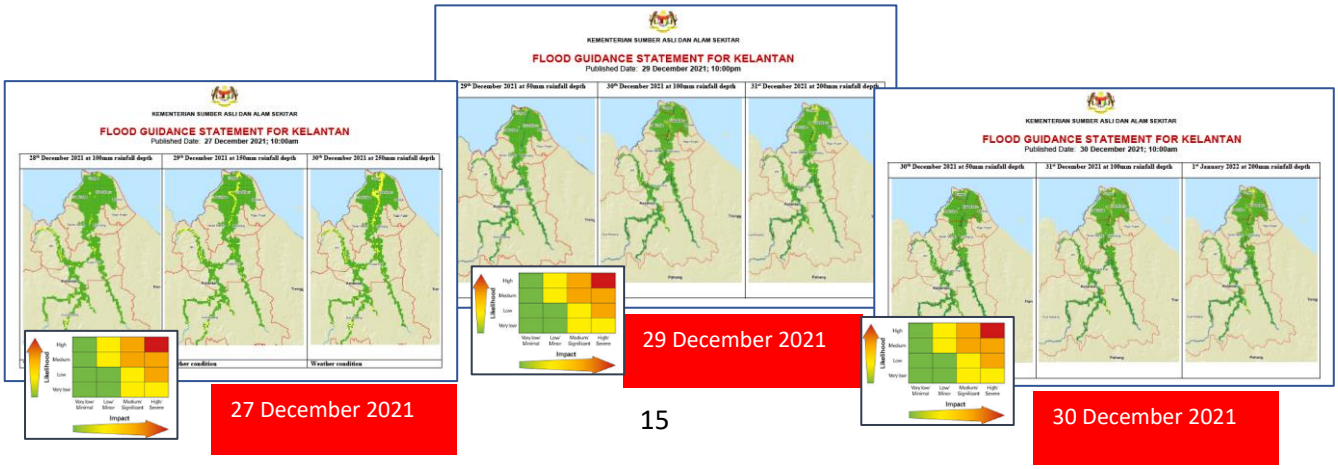
(ii) The construction of Permanent Disaster Evacuation Centre

(iii) Landslides Mitigation Works

(iv) Improvement in Forecasting Technology



IBF analysis for Kelantan River Basin based on the warnings issued on 27 - 30 December 2021



(v) Community-based Disaster Risk Reduction

d) Enhancing disaster preparedness and promoting "build-back-better" for rehabilitation and recovery

Disaster Simulation and drills activities

Post Disaster Voluntery Works

4.0 CONCLUSION

Disasters, once they occur, are beyond management — they are often destructive and uncontrollable. However, risk is something we can manage, mitigate, and prepare for. To build a resilient nation, it is essential to instill a culture of disaster risk reduction (DRR) among our people. This requires a collective effort that starts with educating the public, protecting our environment, and responsibly managing our resources.

For Malaysia, ensuring that we are safe from disasters must be a priority, as it directly impacts the well-being of our citizens and the stability of our nation. This mission to safeguard our future must be embraced by all levels of society. It cannot be achieved by government or authorities alone; it requires active participation from every individual. We must focus on grassroots efforts, starting at the local level, ensuring that no one is left behind in the pursuit of resilience.

While significant strides have been made in disaster management, there is still much to be done. It is crucial to continue raising awareness, strengthening preparedness, and improving response strategies. Our success in disaster risk reduction hinges on a unified, informed, and resilient population. Together, we can create a safer, more sustainable future, one that is prepared to withstand and recover from the challenges that lie ahead.