ASIAN DISASTER REDUCTION CENTER
Visiting Researcher Program (FY2023)

DEVELOPMENT OF DISASTER RISK MANAGEMENT PLAN IN VIET NAM

LESSONS LEARNED FROM JAPAN

ADRC Visiting Researcher FY 2023
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ABBREVIATION

ADRC	Asia Disaster Reduction Center
CCA	Climate change adaptation
CBDRM	Community-based disaster risk management
DRM	Disaster risk management
DRR	Disaster risk reduction
DRRP	Disaster Risk Reduction Partnership
GEJE	Great East Japan Earthquake
JICA	Japan International Cooperation Agency
LNDPC/ DRM Law	Law on Natural Disaster Prevention and Control also known as Viet Nam Disaster Risk Management Law
MARD	Ministry of Agriculture and Rural Development of Viet Nam
MLIT	The Ministry of Land, Infrastructure, Transport and Tourism of Japan
NDPC	Natural Disaster Prevention and Control
NGO	Non-governmental organization
NSCDPC	National Steering Committee for Disaster Prevention and Control
VDDMA	Viet Nam Disaster and Dyke Management Authority
VINASARCOM	National Committee for Incidents and Disasters Response, Search and Rescue .
VR	Visiting Researcher Program of ADRC
UN	United Nations

ACKNOWLEDGEMENT

I would like to express my deepest appreciation to the Asian Disaster Reduction Center (ADRC) for their invaluable support and assistance throughout my visiting researcher program. The opportunity to participate in this program has significantly contributed to my research entitled "Developing Disaster Risk Management Plan – Lessons learned from Japan Viet Nam".

The ADRC's commitment to fostering international collaboration and knowledge exchange in disaster risk reduction is truly commendable. Their dedication to facilitating meaningful dialogue and learning experiences has greatly enriched my understanding of disaster risk management, particularly in the context of Japan and Viet Nam.

I am particularly grateful for the guidance and expertise provided by the ADRC team, which was instrumental in finalizing my research. Their insights and feedback have been invaluable in shaping the direction and outcomes of my study. Their unwavering support and encouragement have been a constant source of motivation throughout my research journey.

The visiting researcher program has provided me with a unique platform to engage with experts in the field, gain firsthand experience of disaster risk management practices in Japan and Viet Nam, and contribute to the ongoing discourse on disaster risk reduction. The knowledge and skills I have acquired through this program will undoubtedly be instrumental in my future endeavors in disaster risk management.

In conclusion, I would like to express my sincere thanks to my ADRC colleagues for their help and support during my stay in Japan. I would like to convey my sincere thanks to Mr. Sasahara Akio (Executive Director), Ms. Miki Kodama and Mr. Makoto Ikeda and other staff of ADRC that gave us the valuable lectures, kindness and guidance. Especially I would like to thank Ms. Nakamura – my mentor who gives me the concrete guidance and supports to fulfil my tasks in Japan.

CHAPTER 1: INTRODUCTION

1. Background information and rationale

The development of disaster risk management (DRM) plans is an important step in enhancing a country's resilience to natural disasters. In Viet Nam, DRM efforts have primarily focused on rural areas and often employ effective community-based disaster risk management (CBDRM) methods. However, current disaster management policies and efforts focus largely on emergency response and disaster recovery, and less so on risk reduction, prevention, and adaptation.

A new report jointly developed by the government of Viet Nam, the World Bank, and the Global Facility for Disaster Reduction and Recovery provides an in-depth and multi-sectoral analysis of natural risks in coastal Viet Nam and reviews current efforts in risk management, proposing a concrete action plan to balance the risks and opportunities of coastal development.

Viet Nam is also implementing the Sendai Framework for Disaster Risk Reduction, which outlines four priority areas: (1) Understanding disaster risk, (2) Strengthening disaster risk governance to manage disaster risk, (3) Investing in disaster risk reduction for resilience, (4) Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation, and reconstruction Japan has a long history of dealing with natural disasters due to its geography, topography, and climate. As a result, the country has developed a wealth of knowledge and experience in minimizing damage from disasters. Japan has continuously strengthened its disaster risk reduction systems in order not to repeat the same damages in future disasters.

Japan has also been actively sharing its knowledge and expertise with other countries through initiatives such as the World Bosai Forum, Asia Conference on Disaster Risk Reduction, Asia Disaster Reduction Center, etc. These initiatives have supported other Asian countries in enhancing their resilience against climate change and natural disasters, including Viet Nam.

In conclusion, Viet Nam can learn from Japan's experience in developing and implementing effective disaster risk management plans. By focusing on understanding disaster risks, strengthening disaster risk governance, investing in disaster risk reduction for resilience, and enhancing disaster preparedness for effective response, Viet Nam can enhance its resilience to natural disasters.

2. Objectives of the research

The primary objective is to provide recommendations and key insights for Vietnam in the development of its Disaster Risk Management (DRM) plan, drawing from the experiences and lessons learned from Japan. The research also aims to understand and address the challenges faced by both Viet Nam and Japan, and to apply these insights to the development of effective disaster risk management strategies. The ultimate goal is to enhance the resilience of communities to disasters and contribute to their sustainable

development

3. Expected results

The research is expected to make a significant contribution to our understanding of disaster risk management and to the development of effective, context-specific disaster risk reduction plans for Viet Nam. Specifically:

- A comprehensive understanding of the concepts, approaches, and practical experiences of Japan in developing local disaster risk reduction plans is anticipated. This includes an in-depth analysis of Japan's methodologies, strategies, and tactics in disaster risk management, as well as the country's unique solutions to disaster-related challenges.
- The research aims to gain insights into the practical application of these strategies in real-world scenarios. This involves studying Japan's implementation of disaster risk reduction plans at the local level, and the impact of these plans on community resilience and disaster response.
- Based on the knowledge obtained from the Japanese context, the research will then focus on making recommendations to improve local disaster risk management plans in Viet Nam. These recommendations will be tailored to Viet Nam's specific needs and circumstances, and will aim to enhance the country's capacity to manage and mitigate disaster risks.

4. Main activities

To obtain the research objectives, the following activities will be conducted:

- Review and Analyze Relevant Documents on DRM System in Viet Nam and Japan: This activity involves a comprehensive review and analysis of pertinent documents related to the DRM systems in both Viet Nam and Japan. The aim is to gain a deep understanding of the existing frameworks, strategies, and methodologies employed in these countries, specifically:
    - Japan 2023 White Paper on Disaster Management (Cabinet Office, Government of Japan).
    - Disaster management in Japan (Cabinet Office, Government of Japan).
    - Law on Disaster Prevention and Control (Government of Viet Nam, 2020)
    - Decision No. 342/QD-TTg dated March 15, 2022 on Promulgation of natural Disaster Risk Management Plan by 2025
    - Circular 02/2021/TT-BNNPTNT dated June 07, 2021 of Ministry of Agriculture and Rural Development guiding the development of the local disaster risk management
- Understand the Relations between Government Organizations and Local Communities in Preparing the DRM Plan in Japan: This activity will delve into the dynamics between government organizations and local communities in Japan in the context of DRM planning. It will explore how these entities collaborate, the roles they play, and the mechanisms in place for community participation. This understanding will be crucial in identifying effective strategies for community engagement in DRM planning.
- Participate in Field Visits to learn the DRM Plan development process and methodology of Japan Localities: These visits will offer opportunities to observe and understand how DRM plans are developed and implemented at the local level, how communities are engaged in the process, and how these plans are integrated into broader

regional and national DRM strategies. The field visits include: DRR education events and drills, DRR forum and platforms, DRR constructions, etc.

CHAPTER 2: DISASTER RISK MANAGEMENT IN JAPAN

1. General information

1.1 Geography

Japan is an island country located in the western Pacific Ocean. Total land area is about 377,727km2[1]. Japan has a total of 6,852 islands extending along the Pacific coast of East Asia. The country, including all of the islands, lies between latitudes 240 and 460N, and longitudes 1220 and 1460E. The main islands, from north to south, are Hokkaido, Honshu, Shikoku and Kyushu. The capital is Tokyo.

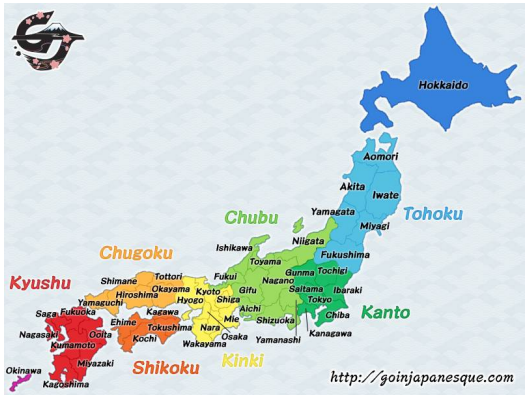

Figure 1: Map of Japan

Japan is predominantly mountainous – about 70% of the national land is mountain – and long mountain ranges form the backbone of the archipelago. The Japan Alps studded with 3,000 meter peaks bisect the central portion of Honsu – the main island. Japan is located in the Circum-Pacific Volcanic Belt (also known as the “Ring of Fire”) where seismic and volcanic activities occur constantly. Japan and its surrounding areas experience roughly a tenth of all earthquakes that occur in the world. Of the world’s active volcanoes, 7% exist in Japan (JMA, 2016).

1.2 Population

As of October 1, 2022, the total population was 124,947 thousand, a decrease of 556 thousand compared with the previous year.

The top five prefectures in population were Tokyo, Kanagawa, Osaka, Aichi and Saitama. These prefectures account for 37.5 percent of the total population. Tokyo had the largest population in 2022 (11.2% of the total population – According to the Statistics Bureau, Ministry of Internal Affairs and Communication).

1.3 Climate and river characteristics

A major feature of Japan’s climate is the clear-cut temperature changes between the four seasons. In spite of its rather small area, the climate differs in regions from a subarctic to a subtropical climate. The side of the country which faces the Sea of Japan has a climate with much snow in winter by seasonal winds from the Siberia. Most of the areas have rainy season from May to July by the seasonal winds from the Pacific Ocean.

[1] Ministry of Land, Infrastructure, Transport and Tourism website,”the Disaster Risk of the Land of Japan” https://www.mlit.go.jp/river/basic_info/english/land.html

Due to Japan's extreme topographical and meteorological conditions, the rivers exhibit distractive natural characteristics. Rivers in Japan are narrow, steep and short making them prone to flooding[2]. The ratio of peak flow discharge to the basin area is relatively large, ranging from 10 times to 100 times. The water level rises and falls very quickly and the volume of sediment runoff is large.

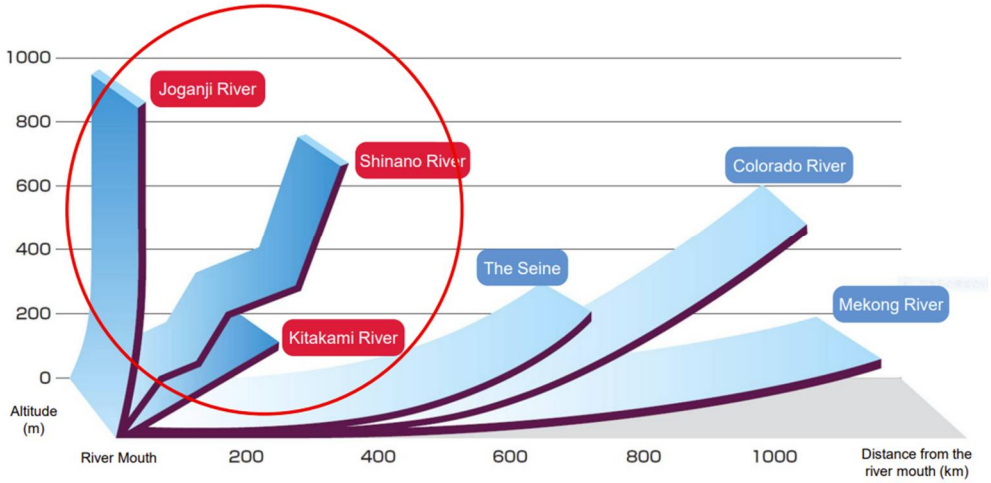

Figure 2: River gradients in Japan and the world

2. Japan disaster risk profile

Japan is located in the Circum-Pacific Mobile Belt where seismic and volcanic activities occur constantly. Although the country covers only 0.25% of the land area on the planet, the number of earthquakes and active volcanoes is quite high. Because of geographical, topographical and meteorological conditions, the country is subject to frequent natural disasters such as typhoons, torrential rains, heavy snowfalls, as well as earthquakes and tsunami. Japan is affected by typhoon mostly every year and volcanic disasters triggered by eruption and volcanic earthquake.

Every year there is a great loss of people's lives and properties in Japan due to natural disasters. Until the second half of 1960s, large-scale typhoons with earthquakes caused extensive damage and thousands of casualties. Thereafter, with the progress of society's capabilities to respond to disasters and mitigate vulnerabilities to disasters by developing disaster management systems, promoting national land conservation, improving weather forecasting technologies, and upgrading disaster information communications systems, disaster damage has shown a declining tendency.

[2] Ministry of Land, Infrastructure, Transport and Tourism, Water and Disaster Management Bureau website, Overview of River Administration in Japan 2005.

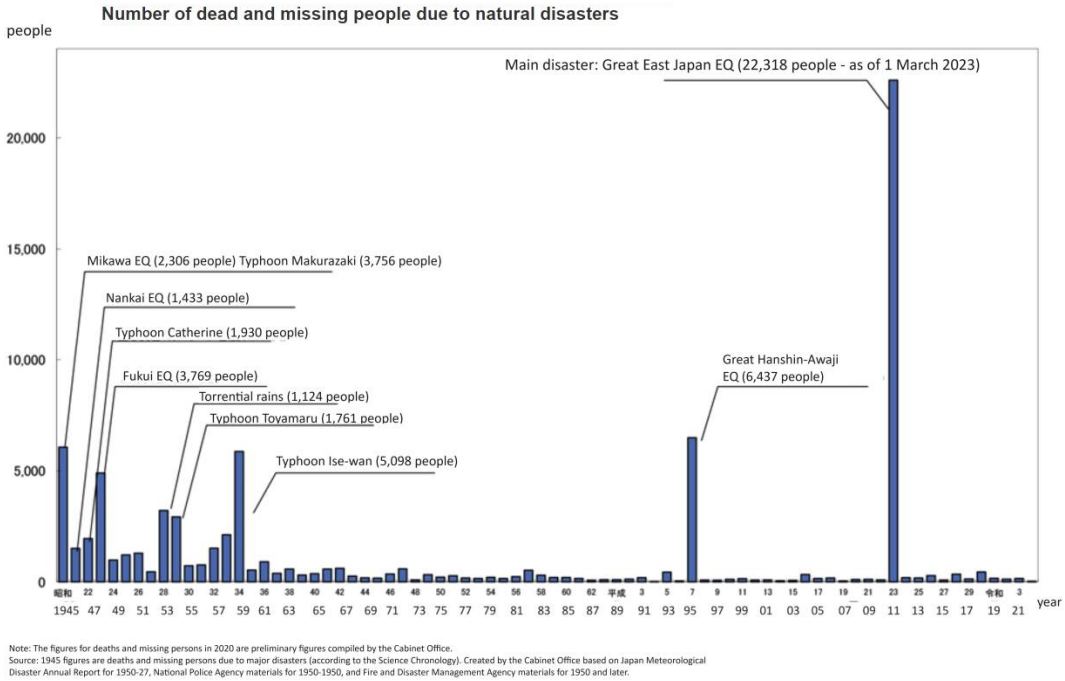

Figure 3: Number of Deaths and Missing caused by natural disasters in Japan [3]
Source: 2023 White Paper on Disaster Management in Japan

3. Notable disasters in Japan

Japan is prone to natural disaster, especially earthquake. In 1995, more than 6,400 people died of the Great Hanshin-Awaji Earthquake. Also in 2011, more than 22,000 people died or went missing due to the Great East Japan Earthquake (GEJE). There is also a high probability of the occurrence of large scale earthquakes in the near future including impending possibilities of Nankai Trough Earthquake and Tokyo Inland Earthquake. As such, natural disasters remain a menacing threat to the safety and security of the country. Followings are the summary of major disasters in Japan:

Great Hanshin-Awaji Earthquake (January 1995)

On 17 January 1995, an earthquake with a 7.3 on the Richter scale occurred at Awaji island of Hyogo Prefecture in Western Japan. It killed 6,434 people, injured 43,792 people, destroyed 104,906 houses, half destroyed 144,274 houses, and partially destroyed 390,506 houses. By the fires broke out along with the earthquake, the area of 835,858 square meters was burnt down.

[3] With regards to the Hanshin-Awaiji Earthquake and the Great East Japan Earthquake, those figures include earthquake-related deaths.

Figure 4: The Great Hanshin-Awaji earthquake (1995).
Source: Cabinet Office, White Paper on Disaster Management

The Great East Japan Earthquake

A magnitude 9.0 earthquake hit the northeastern Japan on 11 March 2011, recording the largest earthquake ever hit in Japan. Its epicenter was located in the coast of Sanriku and its epicentral area stretched from the coasts of Iwate Prefecture to Ibaraki Prefecture. Massive shakes were observed particularly in eastern Japan including Japanese intensity scale of 7 registered in the north of Miyagi Prefecture. Furthermore, this earthquake triggered seafloor movements and generated massive tsunami. According to the National Police Agency, this earthquake and tsunami have left unprecedented human suffering: 15,870 people death, 2,814 people missing and 6,114 people injured, as well as property damage: 129,472 totally collapsed buildings, 255,977 half collapsed buildings and 702,928 partially collapsed buildings. Furthermore, the value of the destruction of the social infrastructure, housing, and corporate facilities was estimated at 16.9 trillion yen and it had a great impact on Japanese economy.

Figure 5: The Great East Japan earthquake (2011).
Source: Ishinomaki City, "Great East Japan Earthquake Archive Miyagi"

Noto Peninsula Earthquake (January 2024)

On 1 January 2024, a magnitude 7.6 earthquake struck the Noto Peninsula in Ishikawa Prefecture, Japan. As the epicenter was very shallow, large tremors were observed in many places and a tsunami warning was issued. Since then, more than 1,500 aftershocks have followed the main shock. The tsunami damaged at approximately 160 hectares in Suzu City and Noto City. Power and water supplies were cut off, communications were disrupted. Some districts are isolated with roads cut off and food, water, blanket and fuel, basic needs are still in short supply. The quake caused fires in some cities and it is estimated that hundreds of houses were burnt down.

The Japanese Government applied the Disaster Relief Act towards 35 cities, 11 towns and 1 village in 4 prefectures including Niigata, Toyama, Ishikawa and Fukui in

order to lead the national-level relief operations. As of 12 March, the Cabinet office confirmed 241 deaths, 1,540 people were injured. More than 84,976 houses are reported to be collapsed/damaged.[4]


Figure 6: *Noto Peninsula Earthquake* (2024).
Source: ADRC VR FY2023 visit March, 2024

4. Japan disaster management system

4.1 Legal basis for disaster risk management in Japan

Japan has had the progress in disaster management laws and systems since 1945. It is a national priority to protect national land as well as citizens' lives, livelihoods, and property from natural disasters. The turning point for strengthening the disaster management system came into effect in response to the immense damage caused by Typhoon Isewan in 1959, and led to the enactment of the Basic Act on Disaster Management in 1961, which formulates a comprehensive and strategic disaster management system. Thereafter, the disaster management system has been continuously reviewed and revised following the lessons learned from large-scale disasters.

In order to applying to all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as recovery and rehabilitation, relevant laws and regulations were enacted. They include Basic Act on Disaster Management (1961), Disaster Relief Act (1947), Building Standard Law (1950), Landslide Prevention Act (1958), River Act (1964), and Act on Special Measures for Large-scale Earthquakes (1978).

Japan's legislation for disaster management system have addressed all of the disaster phases of prevention and preparedness, emergency response as well as recovery and reconstruction with roles and responsibilities among the national and local governments clearly defined. It is stipulated that the relevant entities of the public

[4] Cabinet Office - The 2024 Noto Peninsula Earthquake Damage Report as of 12 March. https://www.bousai.go.jp/updates/r60101notojishin/r60101notojishin/pdf/r60101notojishin_36.pdf

and private sectors are to cooperate in implementing various disaster countermeasures.

The Basic Act on Disaster Management has constantly been reviewed and amended since its first enactment, and with lessons learned from the Great East Japan Earthquake, provisions were added including enhancement of the measures concerning support activities mutually done by local governments in 2012 and the measures for ensuring smooth and safe evacuation of residents and improving protection of affected people in 2013. In 2014, provisions were added for strengthening measures against unattended cars in order to promptly clear them from the roads for emergency vehicles. In 2021, in order to ensure smooth and prompt evacuation in the event of a disaster and strengthen the implementation system for disaster measures, evacuation information was reviewed, individual evacuation plans were legalized, and consultation rules for wide-area evacuation were established. In addition, the government has taken measures such as making it possible to establish a disaster management headquarter for disasters of a scale that has not been able to establish a national disaster response headquarters

Table 1: Outline of the Basic Act on Disaster Management

<table>
<tr><td colspan="2">1. Clearer definition of the philosophy and the responsibilities for disaster management.
- Clarification of basic principles of disaster countermeasures: Clarification of basic policies including the concept of disaster reduction
- Responsibilities of the government, prefectures, municipalities, and designated public institutions: Formulation and implementation of the plan for disaster management, mutual cooperation
- Responsibilities of residents: Self-preparedness for disaster, stockpiling of basic necessities, voluntary participation in disaster preparedness activities</td></tr>
<tr><td>2. Organization: Development and promotion of comprehensive disaster management administration
- National government: Central Disaster Management Council, major (extreme) disaster management headquarters
- Prefectural and municipal governments: Local disaster management headquarters</td><td>3. Planning system: Development and promotion of systematic disaster management measures
- National Disaster Management Council: Disaster Management Basic Plan
- Designated local government organizations and public institutions: Local Disaster Risk Management Plan
- Prefectures and municipalities: Local disaster management operation plan
- Residents: Community Disaster Risk Management Plan</td></tr>
<tr><td>4. Promotion of Disaster Countermeasures
- Definition of the roles and responsibilities to be performed by each actor in each stage of prevention, preparedness, response and recovery
- Primary disaster response procedures</td><td>5. Protection of affected people and their livelihood
- Prior preparation of the lists of the people requiring assistance in the case of disaster
- Clarification of the standards for evacuation centers and facilities in the case of disaster</td></tr>
</table>

including evacuation order by the head of municipalities taking over emergency measures by prefectures or designated administrations in case of the large-scale disaster	- Improvement and expansion of protection measures for affected people through preparation of the certificates and the list of affected people - Stipulation of the framework for wide-scale evacuation and goods transportation
6. Financial measures - Implementation of laws are funded by each responsible party - Financial measures for extreme disasters by the government	**7. State of Disaster Emergency** - Declaration of disaster emergency state →Cabinet decision of government's policy (basic policy for countermeasures) - Emergency measures (restriction on distribution of basic necessities, moratorium on financial obligation, urgent enactment of Cabinet Order related to acceptance of international support, automatic enforcement of the Act on Special Measures concerning Preservation of Rights and Interests of Victims of Specified Disaster)

4.2 Organizational structure for disaster risk management in Japan

4.2.1 Cabinet Office and related ministries in DRM system

Since the reforms of the central government system in 2001, a Minister of State for Disaster Management is placed to integrate and coordinate disaster risk management policies and measures of ministries and agencies. With the revision of the Basic Act on Disaster Management in 2021, the Minister of State for Disaster Management is legally required, and the government's disaster prevention system is being further strengthened in terms of organization. In the Cabinet Office, which is responsible for securing cooperation and collaboration among related government organizations in wide-ranging issues, the Director General for Disaster Management is mandated to undertake the planning of basic disaster management policies and response to large-scale disasters, as well as conduct overall coordination. To prepare for disasters, the National Disaster Management Council with the Prime Minister as the Chair and all Cabinet members decides the national government's disaster management policies. Such decisions are carried out by respective ministries and agencies, accordingly. In the event of a large-scale disaster, the Cabinet Office is engaged in collection and dissemination of accurate information, reporting to the Prime Minister, establishment of the emergency activities system including the Government's Disaster Management Headquarters, overall wide area coordination concerning disaster response measures.

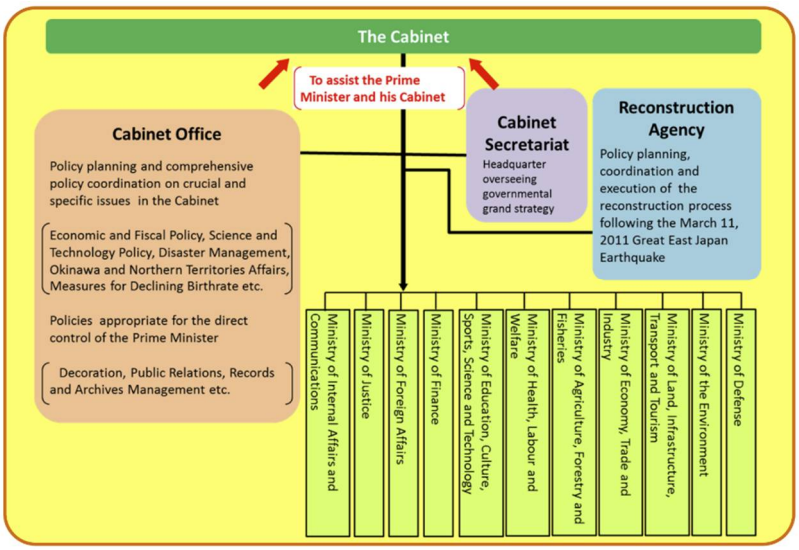

Figure 7: Cabinet Office and Related Ministries and Agencies

4.2.2 National Disaster Management Council

The National Disaster Management Council is one of the councils that deal with crucial policies of the Cabinet and is established in the Cabinet Office based on the Basic Act on Disaster Management. The Council consists of the Prime Minister as the chairperson, all members of the Cabinet, heads of major public corporations and experts. The Council develops the Basic Disaster Risk Management Plan and establishes basic disaster management policies and plays a role of promoting comprehensive disaster countermeasures including deliberating important issues on disaster management upon requests from the Prime Minister or Minister of State for Disaster Management.

Figure 8: Organization of National Disaster Management Council

Within the Cabinet Office, which is the secretariat for this Council, the Minister of State for Disaster Management has been assigned as the Minister State for Special Missions for this issue. This Minister is assisted by the department of the Cabinet Office Director-General for Disaster Management his mandate being to handle planning and central coordination with regard to matters relating to basic policy on disaster risk reduction, and matters concerning disaster countermeasures in the event of a large-scale disaster.

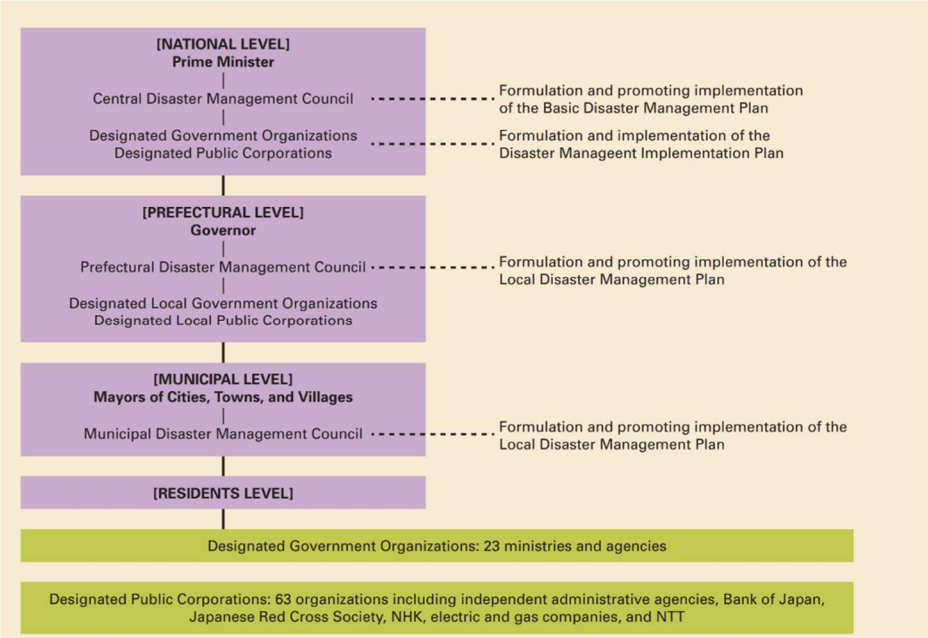

Figure 9: Outline of the Disaster Management System

CHAPTER 3: DISASTER RISK MANAGEMENT IN VIET NAM

1. General information

1.1 Geography

Viet Nam is located in Southeastern Asia, bordered with China, Lao PDR and Cambodia. Viet Nam comprises a total land area of 330,210 km^2 including 310,070 km^2 of land and 21,140 km^2 of water. On a map, Viet Nam appears as an S-shaped strip of land. The terrain is mountainous with coastal lowlands and forested inland regions.

The geography of the land can be divided into three major areas: The Red River delta to the north, which is bordered by mountains on three sides; a large plateau with a narrow coastal plain in the middle of the country; and the Mekong Delta plain to the south.

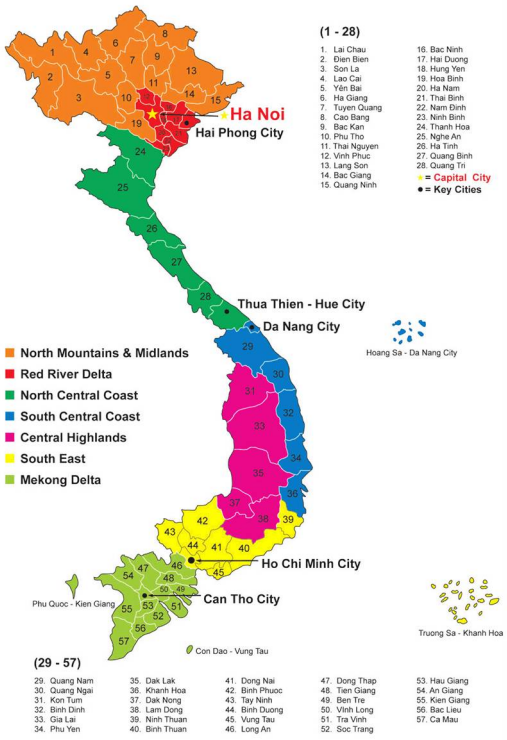

Figure 10: Map of Viet Nam

1.2 Population

The current population of Vietnam is 99,312,476 as of March, 2024[5]. One-third of the country's total population lives in urban centers. The remaining two-thirds live in coastal areas and low-lying deltas. The largest urban centers are in the major cities of Ho Chi Minh City and Ha Noi. Viet Nam recognizes 54 ethnic groups. The largest of them and their percent of the population are: Kinh (Viet) 85.3%, Tay 1.9%, Thai 1.9%, Muong 1.5%, Khmer 1.4%.

1.3 Climate

Viet Nam has both a tropical climate zone and a temperate climate zone, with all of the country experiencing the effects of the annual monsoon. Rainy seasons correspond to monsoon circulations, which bring heavy rainfall in the north and south from May to October, and in the central regions from September to January. Viet Nam's climate is also impacted by the El Niño Southern Oscillation, which influences monsoonal circulation, and drives complex shifts in rainfall and temperature patterns which vary spatially at a sub-national level.

2. Viet Nam disaster risk profile

Viet Nam is one of the most hazard-prone countries in the Asia-Pacific Region. With the coastline of 3,300 km, the country is exposed to hydro-meteorological hazards.

[5] Based on Worldmeter elaboration of the latest United Nations data.

According to the Law on Natural Disaster Prevention and Control 2020[6], According to Viet Nam's disaster management law, Viet Nam is prone to over 22 types of natural hazards. Natural hazards recognized by law include typhoon, tropical low pressure, whirlwind, lightning, heavy rain, flood, flashflood, inundation, landslide and land subsidence due to floods or water currents, water rise, seawater intrusion, extreme hot weather, drought, damaging cold, hail, hoarfrost, earthquake, tsunami, and other types of natural disaster. Among them, flood, storm, flashflood, landslides and droughts are the recurring natural disaster and claimed for the most damages.

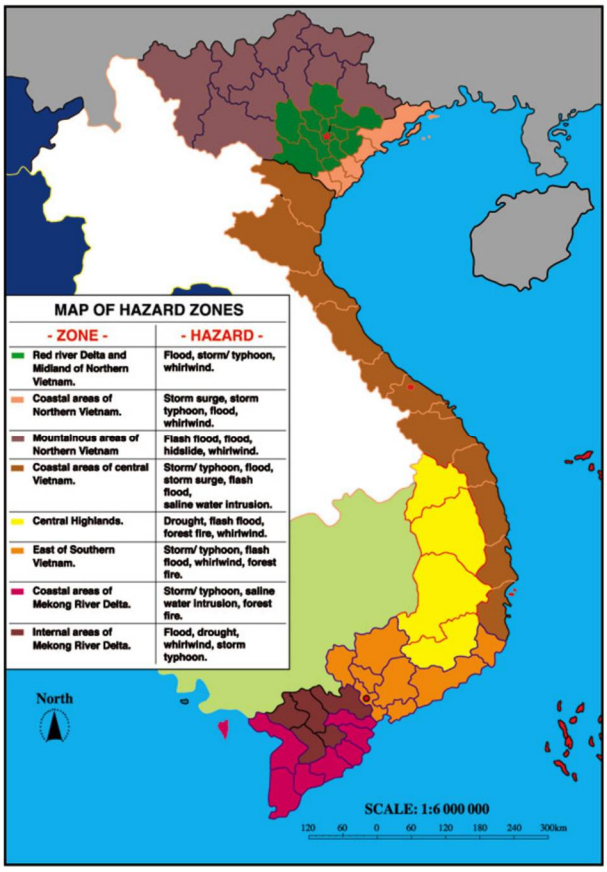

Figure 11: Map of hazard zones in Viet Nam
Source: Viet Nam Disaster Management Authority

For 2023, the INFORM Global Risk Index ranks Viet Nam 78 out of 191 countries for disaster risk and assigned Viet Nam to a medium risk category. This ranking is based on Viet Nam's high exposure to hazards but relatively low vulnerability and above average coping capacity[7]

In addition, Viet Nam is ranked among the five countries likely to be most affected by climate change. The majority of the country is low-lying coastline and low-lying delta region are highly vulnerable to rising sea levels. The statistics show that disasters tend to increase abnormally, with higher intensity, wider scope, irregular and tend to increase in both danger levels, extremes and repeat cycles.

Over the past 20 years, disasters caused 500 dead and missing persons per year, and an economic loss to the GDP is about 1÷1.5%. The figures below showed the damages and losses of disaster for the period 1990 – 2020.

[6] As known as the Disaster Risk Management Law (DRM Law)

[7] "Country Profile 2023/2024: Viet Nam", European Commission, Disaster Risk Management Knowledge Centre (DRMKC), INFORM Global Risk index, https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Country-Risk-Profile

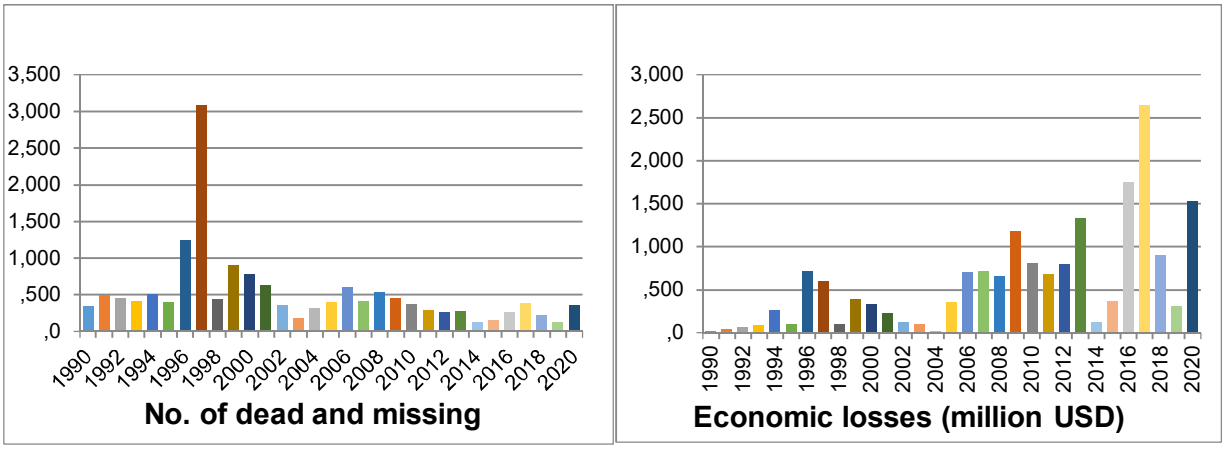

Figure 12: Damages and losses of disaster for the period 1990 – 2020 in Viet Nam
Source: Viet Nam Disaster and Dyke Management Authority

3. Major disasters in Viet Nam

The following is a list of major natural disasters in Viet Nam since 2015:

October 2021 – Floods and Tropical Depression

Floods and landslides caused by heavy rain affected northern and central Viet Nam, resulting in casualties. In Quang Binh province, up to 1,903 residents across seven towns and districts were evacuated, and more than 1,300 houses were damaged. In Quang Ngai and Quang Nam at least one person died, 7,000 people were evacuated, and more than 16,400 houses were flooded. Floods and landslides blocked many of the main roads across central and north Viet Nam, and power outages were reported in Thua Thien-Hue Province[8].

October to November 2020 – Central Viet Nam Floods

In October and November 2020, Viet Nam experienced the worst flooding in the past decade with the Inter Tropical Convergence Zone combined with six consecutive tropical depressions, storms, and tropical typhoons that resulted in widespread flooding in most of central Viet Nam, killing 291 people with an additional 66 persons reported missing, and severely affecting 1.5 million people. The disaster destroyed over 500,000 houses, 144,000 ha of rice paddies, 787 km (489 miles) of dykes and canals, and eroded and damaged 272 km (169 miles) of coastline, resulting in economic damage worth US$1,443,850[9]. The VNDMA reported that many areas in central Viet Nam recorded a total rainfall of more than 2,400 mm, and in some locations, floodwaters exceeded the previous historical high recorded in 1979 and 1999[10]. Figure below shows a timeline of the weather systems involved in this disaster.

[8] Relief Web, 18 October 2021, accessed 28 October 2021, https://reliefweb.int/report/viet-nam/viet-nam-flooding-landslide-storm-and-wind-central-regions-and-central-highlands-19;

[9] IFRC, "Operation Update", Viet Nam Floods, Appeal No. MDRVN020, Report No.4, 7 July 2021, accessed 28 October 2021

[10] "Flood Response Plan", UN Resident Coordinator Office Viet Nam, Issued 31 October 2020

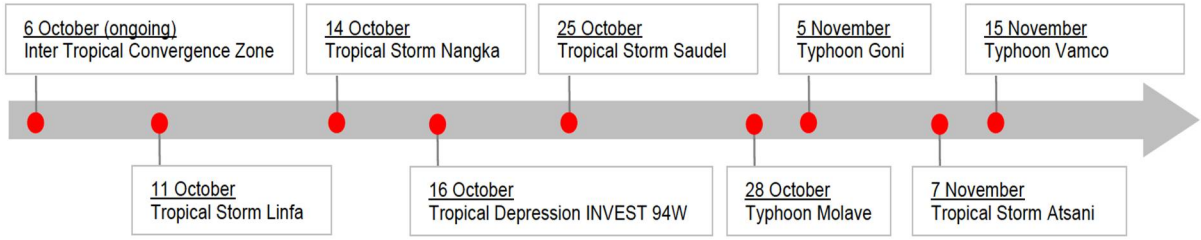

Figure 13 : Timeline of weather systems from 6 October to 15 November 2020. Source: UNOCHA and VNDMA

Typhoon Molave, which made landfall on 28 October 2020 with winds up to 145km/h (90 miles per hour (mph)), was one of the most devastating typhoons in the country for decades.

February-April 2020 – Severe Drought and Saltwater Intrusion

During this period, 10 of the 13 provinces in the Mekong River Delta area were affected by drought and saltwater intrusion, resulting in water shortages, significant damage to crops, and limited access to water for over 200,000 households. More than 685,000 people had access to livelihoods and basic services disrupted, with an estimated loss of production from 460,000 ha of rice paddy[11].

October 2019 – Typhoon Matmo, Floods, and Landslides

Typhoon Matmo passed over central Viet Nam on 30 October, destroying 179 houses and damaging 2,314 others in the provinces of Quang Ngai. Binh Dinh, Phu Yen, Gia Lai, and Thua Thien Hue. As a result one person was reported missing and 14 more people were injured[12]. In the same month, heavy rain caused flooding in other parts of central Viet Nam including Nghe An, Binh Dinh, and Ha Tinh, where three fatalities and damaging to over 5,000 houses was reported. The heavy rain also triggered landslides, which blocked major roads in several areas[13].

November 2017 - Typhoon Damrey

The aftermath of Typhoon Damrey affected 4.3 million people in 9 provinces and left 107 people dead. The typhoon destroyed approximately 3,400 houses and damaged approximately 141,100 houses. The Government evacuated more than 36,000 people in the coastal Can Gio district of Ho Chi Minh. The typhoon also submerged 5,296 ha of paddy fields and nearly 15,000 ha of vegetables and fruit fields.

2015-2017 - Drought

The worst drought Viet Nam had seen in 90 years started in 2015 and lasted until 2017. The drought was attributed to the El Niño weather event, with 52 out of 63 provinces

[11] IFRC, Viet Nam DREF Operation No. MDRVN019, Emergency Plan of Action, 5 February 2020, accessed 28 October 2021
[12] "Typhoon Matmo injures 14, leaving 1 missing". Relief Web, 3 November 2019, accessed 28 October 2021
[13] "Viet Nam – Deadly Floods in Central Provinces", Floodlist, 22 October 2019, accessed 28 October 2021

affected. In addition, the drought was aggravated by saltwater intrusion that extended up to 90 km inland in some coastal areas, leaving river water too salty for human or animal consumption, or to irrigate crops and continue fish-farming production. In total, 2 million people including 520,000 children and 1 million women, were in need of humanitarian assistance.

4. Viet Nam disaster risk management system

4.1 Legal basis for disaster risk management in Viet Nam

Most of the laws and regulations on natural hazards are concerned with high-risk hazards such as floods and storms, while other hazards were addressed in separate laws and regulations. This reflects the historical origins of Viet Nam's natural disaster management framework in 1946 when the Central Dike Protection Committee the forerunner of the present NSCNDPC was established by decree of President Ho Chi Minh. The following are some of the key legal instruments relevant to disaster management in Viet Nam:

- **The Law on Disaster Prevention and Control,** adopted by the National Assembly of Socialist Republic of Viet Nam (Law No. 33/2013/QH13 on 19/06/2016) and the Amendment of Law on Natural Disaster Prevention and Control and Law on Dyke Management (Law N0/60/2020/QH14 on 17/06/2020). The LNDPC is the first stand-alone law to set out Viet Nam's institutional arrangements, functions, and mandates for disaster management. It is also the first law to cover all natural hazards in the country.

- **Other documents guiding the implementation of the Law include:**

+ Decree No. 66/2021/ND-CP dated 06/07/2021 of the Government on the guidelines of the law on disaster prevention and control.
+ Decree No. 79/2021/ND-CP dated 01/08/2021 of the Government on the establishment of the Disaster Risk Management Fund.
+ Resolution No. 76/NQ-CP dated 18/06/2018 of the Government on disaster prevention and control.
+ Decision No. 553/QD-TTg, dated 06/04/2021 of the Prime Minister on approving the national program on community awareness raising and community-based disaster risk management.
+ Decision No. 18/2021/QD-TTg, dated 22/04/2021 of the Prime Minister on detailed regulations on the disaster forecast, warning and information transmission and risk levels.
+ Joint Circular No. 43/2015/TTLT BNNPTNT-BKHDT, dated 23/11/2015 of the Ministry of Agriculture and Rural Development and the Ministry of Planning and Investment on providing guidance on the statistical analysis, the collection of statistics and assessment of damage caused by disasters.
+ Circular No. 10/2021/TT-BKHDT, dated 22/12/2021 of the Ministry of Planning and Investment on guiding the integration of disaster prevention and control content

into the socio-economic development plans and sectoral plan and development plans.

+ Circular No. 02/2021/TT-BNNPTNT, dated 07/06/2021 of the Ministry of Agriculture and Rural Development on guiding the development of local natural disaster risk management plans.

- **National Strategy for Natural Disaster Prevention and Control:** While not a legal document in itself, the National strategy provides the overarching policy framework and strategic direction for disaster management in Vietnam. The objectives and priorities outlined in the strategy guide the development and implementation of specific plans and programs, including the National Plan for DRM.

- **International Agreements and Commitments:** Sendai Framework for Disaster Risk Reduction 2015-2030, Paris Agreement, SEAN Agreement on Disaster Management and Emergency Response (AADMER), etc.

4.2. Organizational structure for disaster risk management in Viet Nam

Since the enactment of the Law on Natural Disaster Prevention and Control (LNDPC) in 2013 and its amendment by Law 60/2020/QH14 in 2021, Viet Nam has further systematized its disaster management apparatus.

The structure and responsibility for DRM and disaster response is set out in the LNDPC and its supporting decrees (regulations), which lay out a multi-agency and hierarchical model for disaster management. The Government of Viet Nam coordinates its work at the national level under the umbrella of inter-ministerial committees, which are replicated at the provincial, district, and commune/ward-level. The system of disaster risk management in Viet Nam is shown in the figure below**:**

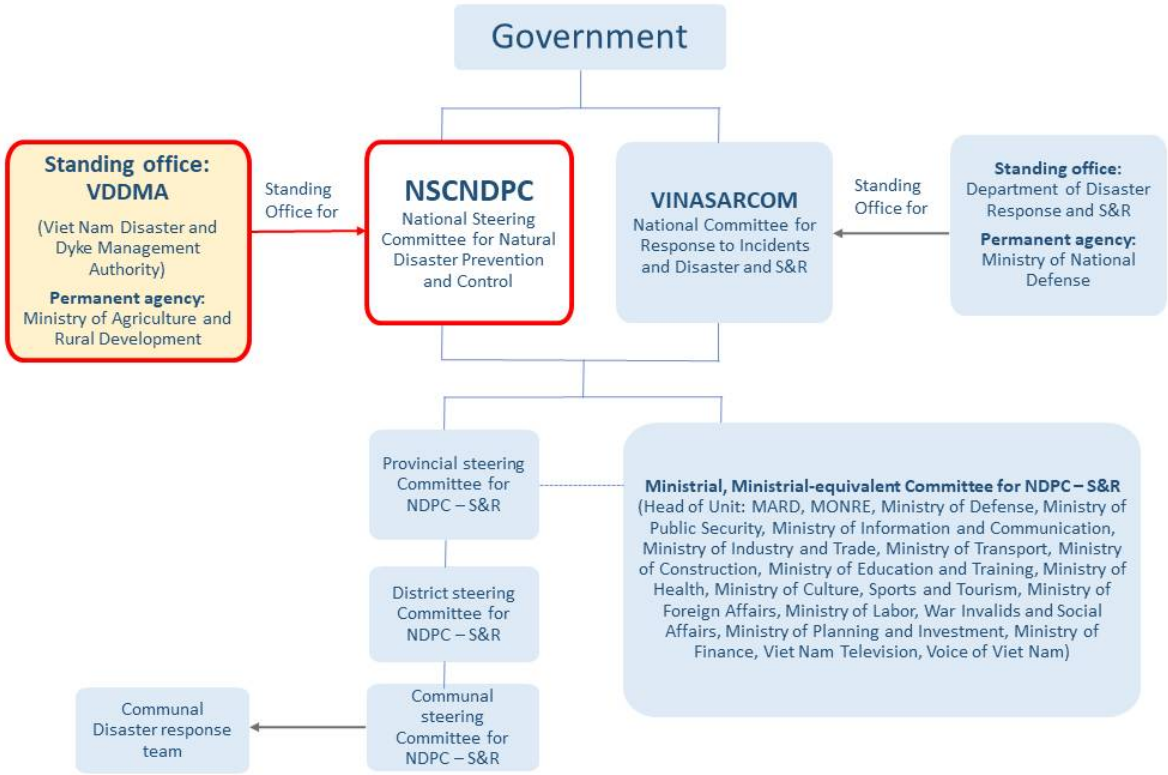

Figure 14 : Systems of DRM in Viet Nam

4.2.1 National Steering Committee for Disaster Prevention and Control

The National Steering Committee for Disaster Prevention and Control, formally the Central Steering Committee for NDPC is the top body for the Vietnamese Government disaster management policy development and decision-making. The Standing Office of the NSCNDPC is the VNDMA, an agency under the MARD. Although the NSCNDPC is established under the LNDPC, its mandate and structure is further elaborated through supporting decrees issued by the Prime Minister, which has allowed the government to refine the role and responsibilities of the NSCNDPC over time through periodic amendments.

The Deputy Prime Minister chairs the NSCNDPC. The Minister of MARD is the Permanent Vice-Chairperson of the NSCNDPC, and the Prime Minister has discretion to appoint other Deputy Chairs. In practice, the General Director of the VNDMA and the Head of the Ministry of Defense have acted as effective Vice-Chairpersons of the NSCNDPC. Members of the NSCNDPC include senior representatives of ministries, ministerial agencies, and governmental agencies senior representatives of Viet Nam Television, Voice of Viet Nam, Viet Nam News Agencies, and the Chief of the Office of the National Committee for Incidents and Disasters Response, Search and Rescue (VINASARCOM).

The mandate of the NSCNDPC is wide-ranging from policy and planning to directing disaster response, and includes the following responsibilities:

- Provide guidance for the formulation and implementation of national strategies and plans, and policies and laws on natural disaster management;
- Preside over the preparation of disaster response plans;
- Direct and coordinate disaster response and recovery nationwide: direct response to “Level 3” disasters;
- Provide advice on directing response to “Level 4” and “Level 5” natural disasters;
- Coordinate and assist or direct local authorities to respond to “Level 1” and “Level 2” natural disasters if such disasters have unanticipated developments which may result in serious consequences;
- Depending on the natural disaster developments and actual situation, decide to take urgent measures and mobilize resources of ministries, ministerial agencies, governmental agencies, organizations and individuals to respond to and remedy the consequences of natural disasters in accordance with regulations of LNDPC;
- Direct the production of statistics on damage and local authorities and ministries’ demands for emergency assistance, recovery and reconstruction;
- Consolidate and consider proposing to the Government and Prime Minister for their decision on measures, use of central government budget and other legal resources for emergency response and disaster recovery nationwide;
- Inspect, expedite and provide guidelines for natural disaster management by ministries and local authorities as prescribed by law;
- Direct, organize drills and provide training for forces involved in natural disaster management; direct, implement and organize the implementation of measures to gradually increase civil capacity for natural disaster response;
- Direct and organize the provision of infrastructure, equipment, materials and special-purpose vehicles; establish database to serve issuance of decisions on command over disaster management at all levels;
- Call for, receive and provide domestic and foreign assistance in case of disaster-related emergency due to natural disasters;
- Provide guidelines, inspect, expedite and consolidate results of provision of assistance resources and report same to the Prime Minister;
- Direct and prepare documents, provide training, disseminate and communicate information via social networks and raise community awareness of natural disaster management on an annual basis;
- Provide guidance on activities of internal voluntary forces in charge of natural disaster management;
- Advise the Prime Minister on establishing a Front Line Steering Committee responsible for provide directions in the areas affected by disasters in special situations;
- Preside over developing and publishing a white paper on disaster management on an annual basis;

- Provide directions and formulate an operating plan and plan for provision of funding for performance of tasks on an annual basis.

4.2.2 Viet Nam Disaster and Dyke Management Authority

The VDDMA is the Standing Office of the NSCNDPC. From its origins 20 years ago as the Department of Dike Management and Flood Control, VDDMA's mandate has widened to cover the 22 or so different types of hazards identified under the LNDPC. VDDMA serves as a natural disaster management authority all year round.

4.2.3 Disaster Risk Reduction Partnership

In 2019, the Disaster Risk Reduction Partnership (DRRP) was established with the membership of 22 international organizations and 4 ministries. The DRR Partnership is an initiative established under the NSCNDP, and has members from key UN agencies, international NGOs, and bilateral and multi-lateral partners. It provides a forum to effectively enhance cooperation and coordination between the Vietnamese government, donors and development partner community, NGOs, and private sector entities in a concerted effort for disaster risk reduction.

As of 2023, the total member of the DRRP is 27 (including 23 international organizations and 4 government agencies). The UN Resident Coordinator is co-chair of the DRR Partnership with the MARD Vice Minister for the term 2023-2025.

CHAPTER 4: DISASTER RISK MANAGEMENT PLAN IN JAPAN AND VIET NAM

1. Introduction

Given their geographical and climatic conditions, Viet Nam and Japan have historically been prone to numerous natural disasters. Both nations have established legislative and institutional frameworks for DRM and have implemented a combination of structural and non-structural measures to mitigate the impacts of these disasters.

Structural measures, such as the construction of dyke systems and the enhancement of earthquake resistance capacities, are employed to prevent or reduce disaster damage. These measures are informed by the countries' unique topographical and climatic conditions and are designed to withstand the specific types of disasters they frequently encounter.

In addition to these structural measures, both countries also implement non-structural measures to further enhance their disaster preparedness. These include the development and promotion of DRM plans, hazard mapping, and education for disaster risk reduction. These measures aim to increase community awareness and preparedness, and to ensure a coordinated and effective response when disasters occur.

Through the research entitled "Developing Disaster Risk Management Plan – Lessons learned from Japan Viet Nam", we aim to delve deeper into these practices. The objective is to understand, analyze, and learn from the DRM systems of both countries, and to use this knowledge to improve local disaster risk management plans in Viet Nam. The expected results include a comprehensive understanding of Japan's DRM practices and recommendations for enhancing Viet Nam's local DRM plans. The main activities to achieve these results include reviewing and analyzing relevant DRM documents from both countries, understanding the relationship between government organizations and local communities in DRM planning in Japan, and participating in field visits to learn about Japan's community-based DRM process and methodology. This research is expected to contribute significantly to the field of DRM and to the development of effective, context-specific DRM plans.

2. Disaster risk management plan in Japan

Japan's legislation for disaster management system, including the Disaster Countermeasures Basic Act, addresses all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as recovery and reconstruction with roles and responsibilities among the national and local governments clearly defined. It also requires the establishment of a Disaster Management Council, which is responsible for coordinating disaster response efforts.

Japan is governed by a three-tiered administration: the national government, prefectures and municipalities. The head of each level takes full responsibility for that jurisdiction in a structure similar to that of a nation. Comprehensive disaster prevention

plans are developed in accordance with the roles to be performed at each stage. Followings are the Disaster Risk Management Planning system in Japan

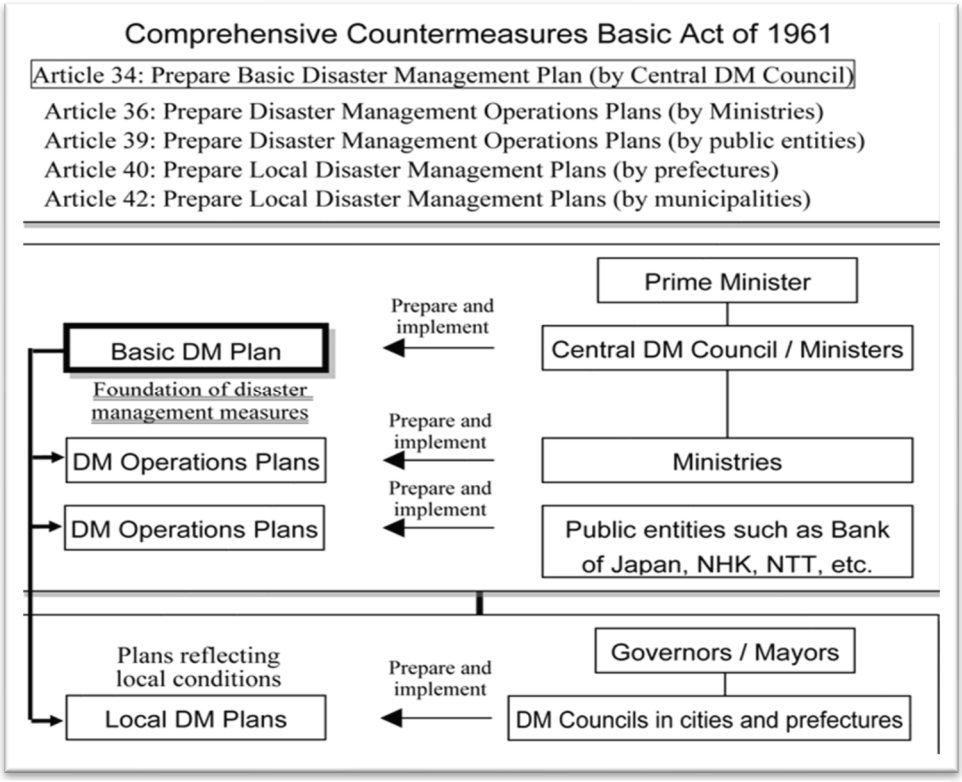

Figure 15 : Structure of Disaster Planning System in Japan

In Japan, the DRM Planning system has comprised of 5 levels including:

- **Basic Disaster Risk Management Plan**: This plan is the highest-level plan and constitutes the basis for disaster management activities prepared by the National Disaster Management Council based on the Disaster Countermeasures Basic Act.
- **Disaster Management Operation Plan**: This is a plan made by each designated government organization and designated public corporation based on the Basic Disaster Risk Management Plan.
- **Prefectural Disaster Risk Management Plan**: This is a plan made by each Prefectural, subject to local circumstances and based on the Basic Disaster Risk Management Plan.
- **Municipal Disaster Risk Management Plan**: This is plan made by Municipal disaster management Council, subject to local circumstances and based on the Basic Disaster Risk Management Plan.
- **Community Disaster Risk Management Plan:** This is disaster management activities plan at the community level which is established by residents and businesses jointly on a voluntary basis.

2.1. The Basic Disaster Risk Management Plan

The Basic Disaster Risk Management Plan is a comprehensive and long-term Disaster Risk Management Plan forming a foundation for the Disaster Management Operations Plan and Local Disaster Risk Management Plan.

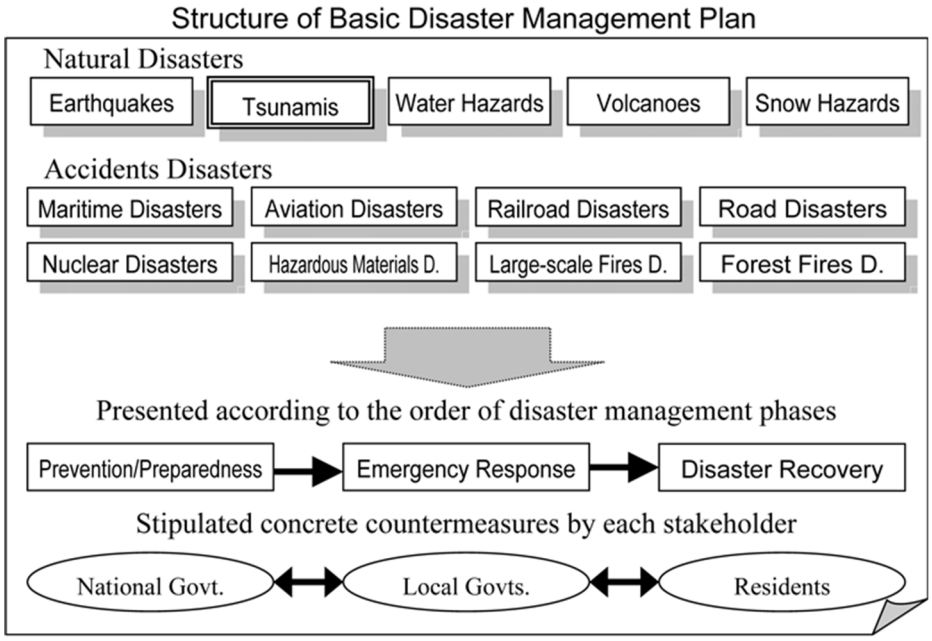

Figure 16: Structure of Basic Disaster Risk Management Plan

The Basic Disaster Risk Management Plan is decided by the National Disaster Management Council in accordance with Article 34 of the Basic Act on Disaster Management. It is reviewed annually and revised when deemed necessary, to take account of the findings from scientific research concerning disasters and their prevention, as well as disasters that have occurred and the effects of emergency disaster management measures implemented in response. Local governments are required to develop Local Plans for Disaster Risk Reduction, while Designated Administrative Organizations and Designated Public Corporations are required to develop Disaster Management Operations Plans, which must be based on the Basic Plan for Disaster Risk Reduction.

The plan was revised entirely in 1995 based on the experiences of the Great Hanshin-Awaji Earthquake. It defines responsibilities of each entity such as the national and local governments, public corporations and other entities. It consists of various plans for each type of disaster, where specific countermeasures to be taken by each entity are described according to the disaster management phases of prevention and preparedness, emergency response, as well as recovery and reconstruction.

Further, based on the lessons learned from the Great East Japan Earthquake, a new chapter was created in December 2011, for Tsunami Disaster Countermeasures and changes were made in September 2012 and January 2014, reflecting amendment of the Disaster Countermeasures Basic Act and reflecting the study results by the Nuclear Regulation Authority (NRA) respectively. In November 2014, another change was made to reinforce the measures for removing unattended cars in case of emergency.

In June 2022, The Basic Plan for Disaster Risk Reduction underwent a recent revision. The primary modifications stem from the 2021 disasters, incorporating strategies to avert embankment-related disasters, enhance the efficiency of rescue operations, and streamline processes by publicizing the names of individuals with unknown safety statuses. Furthermore, new sections have been included, addressing the dissemination of information in case of a large-scale eruption overseas and the judicious issuance of evacuation orders in the event of a tsunami. In addition, revisions have been made in light of recent developments in disaster prevention measures, such as promoting the introduction of advanced technology in disaster response by local governments.

2.2. Disaster Management Operation plan

This is a plan prepared by each designated government organization and designated public corporation based on the Basic Disaster Risk Management Plan.

The head of a designated government organization must formulate a disaster management operation plan pertaining to the function under their jurisdiction, review it every year, and revise it when found necessary. In formulating and implementing a disaster management operation plan, the head of a designated government organization must coordinate it with disaster management operation plans formulated by the heads of other designated government organizations, and endeavor to have all disaster management operation plans formulated and implemented in an integrated and organic manner.

A designated public corporation must, with respect to its operations, formulate a disaster management operation plan, review it every year, and revise it when found necessary. When a designated public corporation has formulated or revised a disaster management operation plan pursuant to the provisions of the preceding paragraph, the corporation must promptly report it to the Prime Minister through the competent Minister having jurisdiction over the relevant designated public corporation, notify the governors of relevant prefectures, and release to the public an outline of the plan or revision.

Local Disaster Risk Management Plan describes disaster management measures that should be taken for each jurisdiction field and matters that form the basis for local Disaster Risk Management Plan. Disaster Management Operation plan must not conflict with Disaster Management Operation plan

For example, as the historic landmark and UNESCO World Heritage site, Himeji Castle in Japan has a Disaster Risk Management Plan in place to safeguard the castle and visitors during emergencies. It includes various measures such as: Risk assessment,

emergency response protocols, implementing measures to enhance the resilience of the castle's structures against seismic activity and fire, maintaining disaster equipment facilities, staff training and emergency drill conducting 4 times every month, etc.

Figure 17 : Himeji castle fire-fighting drill, January 2024
(Source: Himeji castle management office)

2.3. Prefectural Disaster Risk Management Plan

This is a plan made by each Prefectural disaster management Council, subject to local circumstances, must be reviewed every year, and revised when found necessary and based on the Basic Disaster Risk Management Plan. The relevant Prefectural Disaster Risk Management Plan must not conflict with the Disaster management operation plan.

A Prefectural Disaster Risk Management Plan is to provide for the following matters in general:

(i) general outline of affairs or operations relating to disaster management concerning an area of the relevant prefecture to be handled by a designated local government organization having jurisdiction over the area of the prefecture, in whole or in part, the relevant prefecture, the municipalities within the area of the relevant prefecture, a designated national or local public corporations, and public organizations or administrators of facilities important for disaster management within the area of the relevant prefecture concerned (referred to as "Jurisdictional Designated Local Government Organization, etc." in the following paragraph);

(ii)plans by category of operations concerning an area of the relevant prefecture: creation or improvement of disaster management facilities, investigation and research for disaster management, education, drills, and other preventive measures, gathering and transmission of information, issuance and transmission of forecasts and alarms related to disaster, evacuation, fire-fighting, flood prevention, rescue, aid, sanitation, and other emergency disaster control measures and disaster recovery efforts;

(iii)plans for coordination, stockpiling, procurement, distribution, transportation, and communication with reference to labor, facilities, equipment, goods, funds, etc., required for measures set forth in the preceding item, relating to disaster involving an area of the relevant prefecture.

In deciding the Prefectural Disaster Risk Management Plan, the prefectural disaster management council gives due consideration to the need for the Jurisdictional Designated Local Administrative Organization, etc. to receive support from others smoothly or support others in the event of a disaster.

When the Prime Minister has received a report on the Prefectural Disaster Risk Management Plan pursuant to the provisions of the preceding paragraph, the Prime Minister is to consult the National Disaster Management Council and, when found necessary, may provide necessary advice or recommendations to the relevant prefectural disaster management council.

Article 43 of the Basic Act on Disaster Management also states that the joint committee of prefectural disaster management councils must formulate a **Cross-prefectural Disaster Risk Management Plan**, review it every year, and revise it when found necessary in accordance with the basic Disaster Risk Management Plan.

2.4. Municipal Disaster Risk Management Plan

The Municipal disaster management Council (in a municipality where a Municipal disaster management Council is not established, the mayor of that municipality; hereinafter the same applies in this Article) must formulate a Municipal Disaster Risk Management Plan concerning an area of the relevant municipality, review it every year, and revise it when found necessary in accordance with the basic Disaster Risk Management Plan. In this case, the relevant Municipal Disaster Risk Management Plan must not conflict with the disaster management operation plan or the prefectural area Disaster Risk Management Plan of the prefecture including the relevant municipality.

A Municipal Disaster Risk Management Plan is to provide for the following matters in general:

(i)general outline of affairs or operations relating to disaster management concerning an area of the relevant municipality to be handled by the relevant municipality and public organizations or the administrators of facilities important for disaster management within the area of the relevant municipality (referred to as "the relevant Municipality, etc." in paragraph (4));

(ii)plans by category of operations concerning an area of the relevant municipality: creation or improvement of disaster management facilities, investigation and research for disaster management, education, drills, and other preventive measures, gathering and transmission of information, issuance and transmission of forecasts and alarms related to disaster, evacuation, fire-fighting, flood prevention, rescue, aid, sanitation, and other emergency disaster control measures and disaster recovery efforts;

(iii)plans for coordination, stockpiling, procurement, distribution, transportation, and communication with reference to labor, facilities, equipment, goods, funds, etc., required for measures relating to disaster involving an area of the relevant municipality, as set forth in the preceding item.

The Municipal Disaster Risk Management Plan, beyond what is provided for in each item of the preceding paragraph, may establish plans for a disaster reduction drill to be implemented jointly with residents of a certain district within the municipality and companies which have business places at the relevant district, storage of goods and materials required for disaster management activities by District Residents, etc., mutual support by District residents (community), etc. in the event of a disaster, and other disaster management activities in the area.

For example, The Kobe City Disaster Risk Management Plan is a comprehensive framework, drawing insights from past disasters such as the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake. The Kobe City Disaster Risk Management Plan is created by the Kobe City Disaster Prevention Council, and is reviewed every year and revised as necessary.

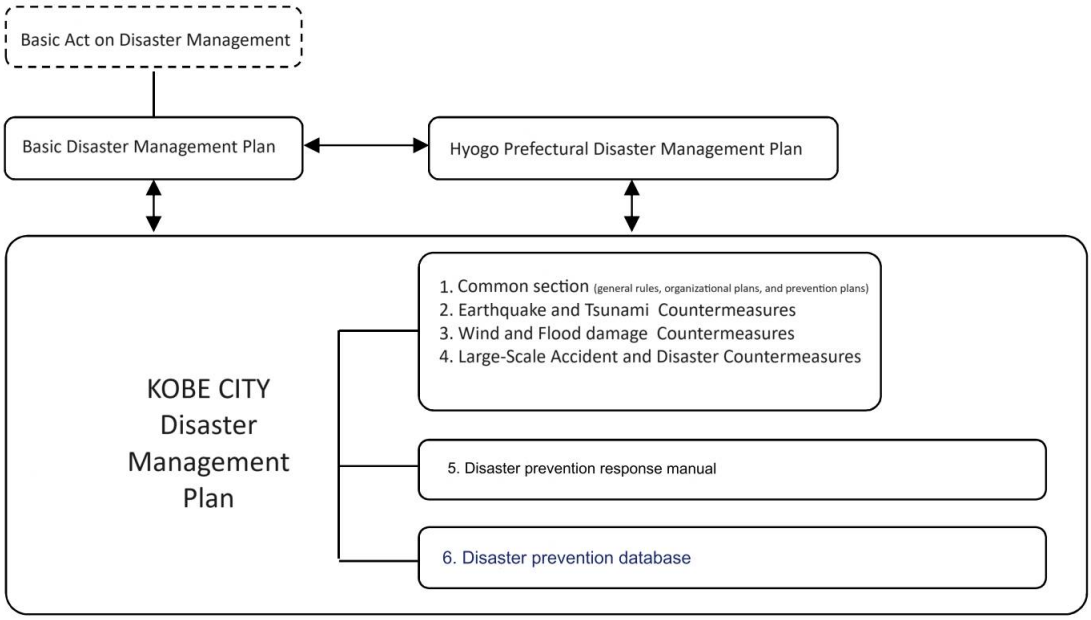

Figure 18 : Structure of Kobe City Disaster Risk Management Plan (Source: Kobe city)

2.5. Community Disaster Risk Management Plan

The Community Disaster Risk Management Planning System was established following the amendment of the "Basic Act on Disaster Management" in 2013 to promote voluntary disaster risk reduction activities through self-help and mutual support and to enhance regional disaster resilience as community residents (including business operators in the area) and municipalities cooperate each other. This allows community residents to prepare Community Disaster Risk Management Plan (draft) and make a

proposal to the Municipal disaster management Council that the Community Disaster Risk Management Plan be stipulated in the Municipal Disaster Risk Management Plan.

Community Disaster Risk Management Plans are designed to link mutual support and public support following discussions by various entities in the community, including residents, business establishments and welfare personnel to freely define the contents of the draft plan, which is then set in the Municipal Disaster Risk Management Plan. The topic in the discussion covers local disaster risks, disaster risk reduction actions and activities during ordinal times and disasters. In addition to the content of the plan, the process of creating the plan, including repeated discussions among district residents and others, is also important for strengthening the power of mutual support.

To foster the advancement of Community Disaster Risk Management Plans through the exchange of examples and experiences, the Cabinet Office organized the "Community Disaster Risk Management Plans Forum 2023" on March 26, 2023. Participants hailing from Tsutsujigaoka, Akishima City, Tokyo, and Takagi-cho, Kokubunji City, Tokyo will be encouraged to prepare for an unforeseeable major earthquake. During the forum, Mutsu City and Mabi-cho, Kurashiki City, Okayama Prefecture will showcase their initiatives, sparking a vibrant discussion on various themes.

3. Disaster Risk Management Plan in Viet Nam

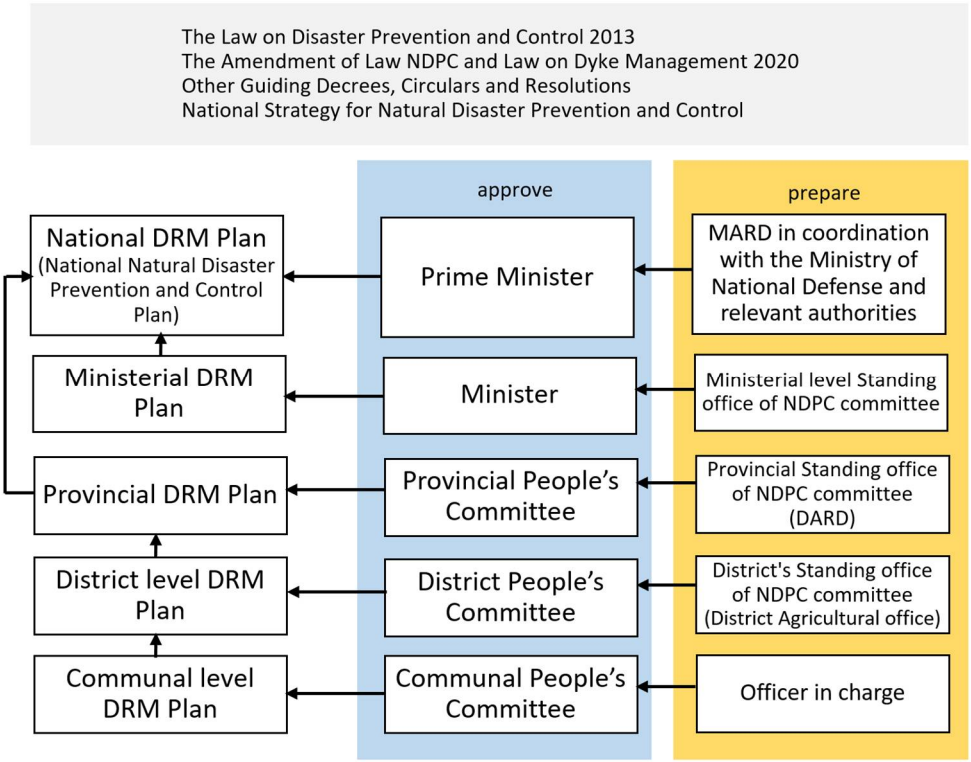

Figure 19 : Structure of Disaster Planning System in Viet Nam

In Viet Nam, the DRM Planning system has comprised of 5 levels including:

- **National Disaster Risk Management Plan** (National Natural Disaster

Prevention and Control Plan)

- **Ministerial Disaster Risk Management Plan**
- **Provincial Disaster Management Operation Plan**
- **District level Disaster Risk Management Plan**
- **Communal level Disaster Risk Management Plan**

In Viet Nam, Disaster Risk Management Plans are developed at local, ministerial and national levels according to a 5-year planning cycle corresponding to the socio-economic development plan and are adjusted annually.

People's Committees at all levels organize the development and approval of local DRM plans and report to superior People's Committees for synthesis and direction. Provincial People's Committees report Provincial DRM plans to the Ministry of Agriculture and Rural Development (MARD) and the Ministry of National Defense.

Ministries, ministerial-level agencies, and Government agencies, within the scope of their functions and authority, are responsible for developing DRM plans of ministries, ministerial-level agencies, and Government agencies. Report DRM plans to the MARD and the Ministry of National Defense.

MARD presides and coordinates with the Ministry of National Defense, ministries, ministerial-level agencies, Government agencies and localities to develop a National DRM Plan to submit to the Prime Minister for approval.

3.1. National DRM Plan

The National DRM Plan (National Natural Disaster Prevention and Control Plan) of Vietnam is stipulated in Section 1, Chapter II of the 2013 Law on Natural Disaster Prevention and Control of Vietnam, alongside regulations pertaining to the National Strategy on Natural Disaster Prevention and Control[14].

The National DRM Plan is prepared by Ministry of Agriculture and Rural Development (MARD), which serves as the permanent agency for the National Steering Committee for Natural Disaster Prevention and Control (NSCNDPC), in coordination with the Ministry of National Defense and relevant authorities.

In April 2022, MARD has coordinated with relevant ministries, sectors and localities to build a National DRM plan to 2025, under Decision No. 342/QĐ-TTg issued by the Prime Minister on March 15, 2022. The Plan defines major tasks in the 2021-2025 period to implement the National Strategy on natural disaster prevention and control by 2030, with a vision to 2050.

[14] The National Strategy for NDPC operates on a 10-year cycle, featuring a 20-year vision, and undergoes periodic updates and adjustments every five years or in response to significant changes in natural disaster occurrences.

The overall aim of the Plan to 2025 is to improve capacity for natural disaster prevention and control, climate change adaptation to proactively respond to and reduce damage caused by natural disasters.

The Plan to 2025 concentrates on completing laws, mechanisms, and policies; disseminating laws and skills and raising public awareness; building capacity for natural disaster prevention and control; improving disaster forecasting and warning; conducting basic investigations and developing master plans and planning for natural disaster prevention and control; promoting international cooperation and the application of science and technology; and investing in infrastructure.

3.2. Ministerial DRM Plan

The ministerial-level natural disaster prevention and control plan encompasses several key components:

- Conduct annual evaluations and updates on socio-economic issues, industry development, and infrastructure within the ministry's purview;
- Assess and analyze natural disaster risks, including common risk levels and the impact of climate change on industry development activities;

- Define appropriate measures and strategies for mitigating natural disaster risks based on identified levels and types of disasters;
- Integrate natural disaster prevention and control measures into industry development planning and initiatives;
- Allocate resources and establish annual and 5-year targets for implementing the natural disaster prevention and control plan;
- Specify the responsibilities of organizations and individuals within the ministry's jurisdiction for executing, monitoring, and evaluating the plan's implementation.

3.3. Local DRM plan

The DRM in Viet Nam will be developed by all the localities from communal to central level as set out in Clause 10 Article 1 of the 2020 DRM Law.

To develop the DRM Plan, local authority should follow the detailed procedures:

1. Review and collect documents; conduct basic data investigation and survey.
2. Determine and assess risks and propose solutions.
3. Formulate a draft of the Natural Disaster Risk Management Plan; seek opinions of agencies and units concerned; receive, respond to and revise the draft.
4. Promulgate the natural Disaster Risk Management Plan: a People’s Committee shall approve and promulgate its plan.

3.1.1. Outline of local DRM Plan

- ***Legal basis**:* This includes the DRM Law, the Law on Irrigation, the National Strategy for Natural Disaster Management, and other relevant under law documents.
- ***Objectives and Requirements***: The plan should align with the policies of the Communist Party, the Government, and the Provincial People’s Council/ District

People's Council/ Communal People's Council. It should also be in accordance with the natural disaster management strategy, planning, and plan at a central/provincial/district/communal level, as well as forecasts, warnings, and the actual situation and resources of the localities.

- ***Characteristics of the localities***
    - Natural Characteristics: The geographical location, topographical and geological characteristics, and meteorological, hydrographic, and oceanographic characteristics.
    - Demographic, Socio-Economic, and Main Infrastructural Characteristics.
- ***DRM Assessment***: An evaluation of the current state of disaster risk management.
- ***Risk Determination and Assessment****:* This involves identifying common types of natural disasters and determining the scope, method, and contents of the assessment.
- ***Disaster Management Measures***: These include preparedness, response, recovery, and reconstruction measures suitable for levels of disaster risks, as well as an integrated flood management plan for provincial river basins and other related plans.
- ***Integration of DRM Contents****:* Determining measures and methods for integrating DRM contents into socio-economic development planning and plans.
- ***Resource Allocation and Scheduling***: This involves determining the resources and schedule for each year and for every five-year period.
- **Responsibility**: Determining the responsibilities of organizations and individuals for implementing, inspecting, and supervising the implementation of the DRM plan.

3.2.2. Provincial DRM Plan

The provincial plan will be approved by the Provincial People's Committee with the following details:

Provincial demographic, socio - economic and infrastructural characteristics

Assessment of natural disaster management

1. Legal documents and policies on natural disaster management: assess level of implementation of laws and policies; plan to provide resources and operating conditions for Command Centers for Natural Disaster Management and forces in charge of natural disaster management.

2. Local committee for disaster prevention and control, search and rescue regulation: describe organizational structures of the provincial committee for disaster prevention and control/search and rescue; human resources and capacity of full-time and part-time forces; infrastructure and equipment of Standing Offices of provincial- and district-level committee for disaster prevention and control; regulations on assigning tasks to members and regulations on cooperation between agencies concerned.

3. Early warning and forecasting: Assess the early warning and forecasting carried out locally through central government, hydro-meteorological forecasting agencies and forecasting and warning agencies of the province and region with respect to the details, reliability, adequacy, continuity, promptness, ease of understanding and news broadcasting tools.

4. Vehicles and equipment serving natural disaster management: produce statistics on and assess the status, lists, quantity, quality, location of storage and organizations and individuals assigned to perform management thereof. Conduct general assessment of regulations on management and use thereof, current capacity and demand thereof in the future.

5. Natural disaster response and search and rescue: assess key forces' capacity for natural disaster response and search and rescue in the province; participation by other civil organizations and individuals. The assessment shall focus on quantity, capacity, equipment and vehicles of these forces.

6. Natural disaster management information and communication: Assess the status of local information and communication systems; methods of natural disaster management information dissemination and communication. Assess the province's capacity for applying and managing natural disaster management database.

7. The community's capacity and awareness of natural disaster management: Conduct assessment of awareness of and skills in response to natural disasters and training in natural disaster management in the province.

8. DRM Infrastructure: Assess the DRM infrastructure system (meteorological, hydrographic, oceanographic and seismic observatories, disaster warning stations, dikes, dams, reservoirs, embankments, works serving prevention of inundation, droughts, saltwater intrusion, landslides, land subsidence and flashfloods, and lightning protection works, storm shelters for boats, evacuation houses, works serving forest fire prevention fighting and other works serving natural disaster management); electric power system, communication system, radio and television broadcasting system; traffic system serving search and rescue.

9. Assess the integration of natural disaster management contents in industry distribution and development and socio - economic development programs, projects, planning and plans: instructional documents; integration results, advantages and disadvantages; proposals and recommendations.

10. Assess post-natural disaster recovery and reconstruction: assistance in natural disaster relief and recovery (producing statistics on and assessing damage and demands); results of implementation of assistance policy and use of emergency resources for infrastructure repair, life stabilization and sustainable livelihood; execution of projects on establishment of settlements in natural disaster-hit areas.

11. Assess financial resources for natural disaster management in the province, direct or indirect investment (through the integration contents), including budget for recurrent expenditure, budget for development investment expenditure, state budget reserves, financial reserve fund, ODA funding, financial assistance from foreign organizations, disaster management fund and other legal sources.

Determination and assessment of natural disaster risks

1. Determine common types of natural disasters.

2. Assess natural disaster risks

a) Scope of assessment: carry out disaster risk assessment by local administrative units; time scope: carry out assessment of risks of future climate-change disasters (based on the latest climate change scenario published by the Ministry of Natural Resources and Environment), the series of collected data on the intensity of natural disasters and damage over the last 05 to 10 years and statistics on historical and major natural disasters that occurred before;

b) Methods and contents of assessment, in the following order of priority:

Assessing intensity of each type of local typical natural disaster according to regulations on levels of natural disaster risks promulgated by the Prime Minister and according to actually measured data and calculation results; assessing vulnerability of each affected subject such as humans, housing and some major economic sectors (agriculture, handicrafts, industry, commerce and tourism), infrastructure (traffic, construction, electric power, communication, irrigation, natural disaster management, health, education and culture infrastructure); general assessment of level of risk of each type of natural disaster affecting each subject due to the impact of climate change on socio - economic activities within the scope of management.

3. Making local disaster risk maps at scales of around 1:5.000 to 1:50.000 and in conformity with the maps of local administrative units; making maps at a scale larger than 1:5.000 in the case of areas frequently hit by natural disasters and highly populated areas; describing level of risk of each type of natural disaster using different colors (light blue: small risk, light yellow: medium risk, orange: significant risk, red: extreme risk and purple: catastrophic).

Natural disaster management contents and measures

1. Determining natural disaster management contents and measures suitable for levels of natural disaster risks and specific types of natural disasters in order to reduce disaster risks, focusing on dangerous areas and vulnerable subjects, specifically: prevention and mitigation measures (structural measure and non-structural measures); natural disaster response measures and natural disaster relief and recovery measures.

2. Focusing on formulating integrated flood management plan for provincial river basins; strong typhoon and super typhoon preparedness plans; flash flood and land slide

prevention plans; drought and saltwater intrusion prevention plans; plans for prevention of flood or flow-induced riverbank erosion or coastal erosion.

3. Specific measures tailored for several types of natural disasters.

Resources and annual and 05-year schedules for implementation of the natural Disaster Risk Management Plan

1. Human and financial resources for implementation of the natural Disaster Risk Management Plan are set out in Clauses 3 and 5 Article 1 of the DRM Plan.

2. Annual and 05-year schedules for implementation of the natural Disaster Risk Management Plan: Rely on the list of natural disaster management tasks, programs, schemes and projects to consider implementing them in the order of priority, carry out investment phasing and determine resources for implementation; annually review, update and make additions to the provincial natural Disaster Risk Management Plan. Provide funding for implementing annual and 05-year plans.

Responsibilities of organizations and individuals for implementing, inspecting and supervising implementation of the natural Disaster Risk Management Plan

Determine contents of specific tasks and delegate responsibilities to organizations and individuals for implementing, inspecting and supervising the implementation of the natural Disaster Risk Management Plan.

1. Organize performance of the assigned tasks specified in the natural Disaster Risk Management Plan; schedule and resources for performance thereof.

2. Formulate an annual implementation plan to fulfill the objectives of the 05 year plan; review, assess and adjust the annual and 05-year natural Disaster Risk Management Plans.

3. Implement, supervise and assess the implementation of the provincial natural Disaster Risk Management Plan; review, report and supervise the implementation of the annual and 05-year plans

3.2.3. District level DRM Plan

District-level demographic, socio - economic and infrastructural characteristics

Assessment of natural disaster management at district level

1. Natural disaster management and search and rescue command systems, including establishing and consolidating the district-level Command Center for Natural Disaster Management; formulating natural disaster response plans and instructional documents.

2. Forces, vehicles, materials, equipment and necessities serving natural disaster management: quantity; agencies and units deploying and storing; location of storage; quality and useful life thereof.

3. Natural disaster management information and communication: Assess the status of local shared and separate information, communication and disaster warning systems; methods of natural disaster management information dissemination and communication.

4. The community's capacity and awareness of natural disaster management: Conduct general assessment of awareness and skills of the people and community, and training in natural disaster management in the district.

5. Status of works serving natural disaster management in the district: produce statistics on and assess the capacity and level of resistance of these works.

6. Financial resources for natural disaster management in the district, direct or indirect investment (through the integration contents), including budget for recurrent expenditure, budget for development investment expenditure, state budget reserves, financial reserve fund, ODA funding, financial assistance from foreign organizations, disaster management fund and other legal sources.

Natural disaster management contents and measures

1. Natural disaster management contents and measures must be suitable for each type of natural disaster and levels of risks of common natural disasters in the district and focus on vulnerable subjects, including building works serving natural disaster management in the district as assigned; organizing dissemination of information and communication to raise community awareness of natural disaster management; organizing determination of dangerous areas hit by various types of natural disasters in the district; formulating plans to respond to levels of risks of common natural disasters in the district; formulating an annual plan to keep watch for natural disaster management; formulating plans to organize natural disaster management skills training and drills.

2. Basic measures for district-level natural disaster management

Proposed demands for resources and annual and 05-year schedules for implementation of the natural Disaster Risk Management Plan

1. List of works serving natural disaster management as assigned to annual and 05-year plans: name of project, location, expected total investment capital, expected time of implementation and provision of annual capital.

2. Demands for human and financial resources for every year and every 05 years for performance of tasks: training in raising community awareness of natural disaster management; reviewing and determining dangerous areas hit by various types of natural disasters in the district; formulating plans to respond to levels of risks of common natural disasters in the district; funding for procurement of specialized equipment serving command over natural disaster management.

Responsibilities for organizing implementation of the natural Disaster Risk Management Plan

Determine contents of specific tasks and delegate responsibilities to organizations and individuals for implementing, inspecting and supervising the implementation of the district-level natural Disaster Risk Management Plan.

1. Organize performance of specific tasks and schedule therefor specified in the natural Disaster Risk Management Plan; resources for performance thereof.

2. Formulate an annual implementation plan to fulfill the objectives of the 05-year plan; review, assess and adjust the annual and 05-year natural Disaster Risk Management Plans.

3. Implement, supervise and assess the implementation of the district-level natural Disaster Risk Management Plan; review, report and supervise the implementation of the annual and 05-year plans.

3.2.4. Communal DRM Plan

Commune-level demographic, socio - economic and infrastructural characteristics

Assessment of natural disaster management at commune level

1. Natural disaster management and search and rescue command systems, including establishing and consolidating the communal committee for disaster prevention and control; establishing and consolidating voluntary forces in charge of natural disaster management.

2. Forces, vehicles, materials, equipment and necessities serving natural disaster management: quantity; agencies and units deploying and storing; location of storage thereof.

3. Natural disaster management information and communication: Assess the status of local shared and separate information, communication and disaster warning systems; methods of natural disaster management information dissemination and communication.

4. The community's capacity and awareness of natural disaster management: Conduct general assessment of awareness and skills of the people and community, and training in natural disaster management in the commune.

Natural disaster management contents and measures

1. Organizing dissemination of information in order to raise community awareness of natural disaster management as follows:

Broadcast news bulletins on natural disaster management; disseminate documents to the people and community; broadcast warning bulletins and bulletins providing instructions on natural disaster management skills in areas under management.

2. Formulating plans to respond to levels of disaster risks and types of natural disasters according to local disaster developments, and human resources, materials and equipment serving natural disaster management.

3. Keeping watch and updating information on disaster developments

4. Determining dangerous areas under management according to the occurrence of natural disasters in the commune, especially historical disasters and topographical and geological characteristics of the areas under management.

5. Preparing places for evacuation

6. Organizing natural disaster management training and drills, executing the project on raising community awareness of community-based disaster risk management.

Responsibility for organizing implementation of the natural Disaster Risk Management Plan

The commune-level People's Committee shall determine contents of specific tasks to implement the natural Disaster Risk Management Plan; organize review and adjustment of the 05-year natural Disaster Risk Management Plan; formulate an annual implementation plan to fulfill the objectives of the 05 year plan; delegate responsibilities to members of the commune-level Command Center for Natural Disaster Management and relevant organizations and individuals performing tasks according to the commune-level natural Disaster Risk Management Plan.

3.3. Challenges of Viet Nam in developing the DRM Plan

When developing disaster prevention and mitigation plans, especially at the local level, there are several challenges that local authorities often face:

- **Complexity of different types of natural disasters:**

+ Each type of natural disaster (floods, droughts, landslides, flashflood etc.) has unique characteristics. Effective plans must be flexible and adapted to specific regions.

+ Addressing different types of disasters necessitates specific prevention and response strategies. For example, flood prevention measures differ from those for droughts or storm surges.

- **Lack of Information and Forecasting**: insufficient coverage of hazardous regions by the national meteorological and hydrological network, leading to inadequate forecasting and delays in issuing timely warnings. Predicting specific events like flash floods and landslides remains difficult due to the complex interactions between weather patterns, terrain, and local conditions. Additionally, the lack of comprehensive historical data and early warning systems limits the availability of real-time information for disaster response. Addressing these challenges necessitates improving the coverage of monitoring networks, enhancing forecasting capabilities, and investing in early warning

systems to provide timely and accurate information for disaster preparedness and response.

- **Public awareness and participation:** Engaging the public in DRM planning and implementation is essential for building community resilience. Vietnam encounter challenges in raising public awareness about disaster risks, promoting community participation, and fostering a culture of preparedness.
- **Coordination Among Relevant Agencies and Units**: Disaster management in Vietnam encompasses various sectors such as agriculture, natural resources, health, education, infrastructure, and social welfare, each with its own priorities and communication channels. Ensuring effective collaboration and communication among these sectors is crucial. Local authorities need to coordinate closely with police, fire departments, health services, and NGOs to enhance preparedness. Establishing clear communication channels, conducting joint training exercises, holding regular meetings, and sharing resources are essential for improving disaster response and preparedness efforts.
- **Limited funding and resources:** Developing effective disaster prevention and mitigation plans requires financial and resource allocation. Localities often struggle to balance available resources to implement necessary measures. Secondly, funding sources, such as disaster prevention and mitigation funds or the Contingency budget for disaster and epidemic, may be limited or difficult to access.

Most disaster prevention plans are developed by local disaster management officials. However, comprehensive planning requires consultation with relevant stakeholders. Unfortunately, budget constraints often hinder engaging external consultants for plan development.

- **Emergency response:** When disasters strike, quick deployment of prevention and response measures is critical. Local authorities must act swiftly and decisively to protect lives and property. Although the local authority has established the communal disaster response team – as the first disaster responders in the ground. However, the operation of the team is still limited due to lack of mechanism and budget.
- **Capacity building:** Developing and implementing DRM plans require specialized knowledge, skills, and capacities among government officials, professionals, and communities. Vietnam may need to invest in capacity-building initiatives to enhance the skills and capabilities of relevant stakeholders.

Most notably, Viet Nam's current disaster management policies focus largely on emergency response and recovery rather than risk reduction and preparedness, while there are many valuable lesson from Japan's approach, which emphasizes these preventive measures. Vietnam can greatly benefit from adopting Japan's lessons to develop more comprehensive DRM plans, enhance its disaster resilience.

CHAPTER 5: LESSONS LEARNED FOR VIET NAM

Viet Nam's Disaster Risk Management Plan is undergoing a significant shift from a passive response to proactive prevention. This shift signifies a fundamental change in approach, emphasizing proactive measures aimed at reducing vulnerability and mitigating risks before disasters occur. By focusing on prevention rather than solely on reactive response, Viet Nam aims to enhance resilience, protect lives and livelihoods, and minimize the socio-economic impact of natural disasters. This proactive approach involves various strategies, including early warning systems, risk assessments, community-based disaster risk reduction initiatives, infrastructure investments, and policy interventions.

Drawing from lessons learned in Japan, Vietnam can shift from passive response to proactive prevention in disaster management. By embracing Japan's experiences and best practices, both central and local authorities in Vietnam can discern the measures they should prioritize in the development of Disaster Risk Management (DRM) plans. Some notable lessons from Japan include:

1. Strengthening community-based disaster risk management

Japan's commitment to community engagement and education in disaster preparedness is deeply ingrained in disaster plans at both national and local levels, underscoring the nation's dedication to empowering individuals and communities to respond to and recover from disasters effectively. This commitment is evident through the implementation of Community-Based Disaster Risk Management (CBDRM) activities nationwide. Some of these initiatives include:

Town-Watching for Disaster Prevention:

Town-Watching for Disaster Prevention is a simple and practical tool for efficiently implementing community based hazard mapping in local communities. Town-Watching for Disaster Prevention consists of 4 parts: Field survey, develop a map of observation, discussion to solve the problem and Presentation.

Town-Watching for Disaster Prevention is a program aimed at comprehending hazardous locations within the local area concerning disasters, while also identifying beneficial areas and strategies for disaster response through observing the town from a disaster prevention perspective. This activity has been implemented for individuals participating in disaster risk reduction (DRR) training in Japan, as well as in numerous countries globally. [15]

[15] Town-Watching for Disaster Prevention Guidebook, 2016 by Yujiro OGAWA

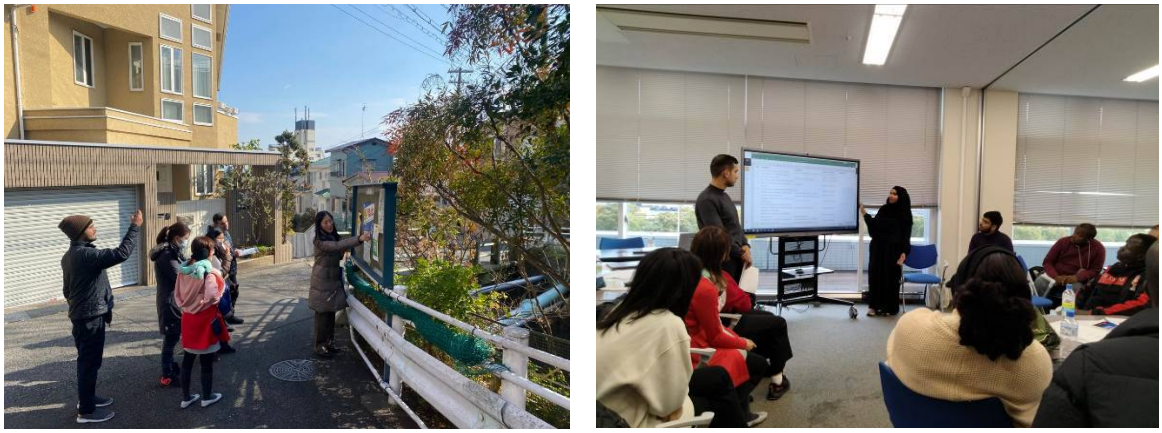

Figure 20: Town-Watching for Disaster Prevention activity with ADRC VR FY2023, January 2024

Public awareness events and disaster memorial museums:

The Great Hanshin-Awaji Memorial Public Awareness Event serves as a poignant reminder of the devastating earthquake that struck the Kobe region in 1995. Through this event, the community comes together to honor the lives lost, the resilience demonstrated, and the lessons learned from the disaster. It provides a platform for educating the public about disaster preparedness and the importance of community resilience. Through various activities such as seminars, workshops, exhibitions, and commemorative ceremonies, attendees gain insights into the significance of disaster prevention measures and the collective efforts required to mitigate future risks. By fostering awareness and understanding, the event not only pays tribute to the past but also empowers individuals and communities to build a safer and more resilient future.

Furthermore, Japan hosts numerous museums and memorial events dedicated to commemorating past disasters, offering valuable insights into the nation's history of resilience and recovery. These institutions serve as important educational resources, shedding light on significant events such as the Great Hanshin-Awaji Earthquake of 1995, the Great East Japan Earthquake and Tsunami of 2011, and other disasters that have shaped Japan's collective memory. Through exhibitions, interactive displays, and firsthand accounts, visitors can gain a deeper understanding of the impacts of these calamities on individuals, communities, and the nation as a whole.

Moreover, these museums and events play a vital role in promoting disaster preparedness and fostering a sense of solidarity among the population, emphasizing the importance of learning from the past to safeguard against future catastrophes. By preserving the memories of these tragedies and honoring the resilience of those affected, Japan's museums and memorial events contribute to a culture of remembrance and renewal, inspiring ongoing efforts to build a safer and more resilient society.

DRR drill for students and family:

In Japan, initiatives like the Iza! Mikaeru Caravan ((disaster prevention education event) exemplify the country's proactive approach to disaster preparedness, particularly among school children and families. These drills are designed to equip participants with

essential knowledge and skills to effectively respond to emergencies. Through interactive workshops, simulations, and educational materials, children and their families learn how to react swiftly and safely during earthquakes, typhoons, and other natural disasters that frequently affect the region. By actively involving both children and their parents in these drills, Japan not only ensures that future generations are better prepared but also fosters a culture of shared responsibility and community resilience.

The Iza! Mikaeru Caravan and similar programs serve as invaluable platforms for promoting disaster awareness, empowering individuals with life-saving information, and ultimately strengthening the nation's overall disaster management capabilities.

Figure 21: The 2024 Iza! Mikaeru Caravan and DRR evacuation simulation in Kozukayama Elementary School, Kobe city

Overall, by prioritizing community engagement and education in disaster preparedness with similar activities, Viet Nam can empower its residents to take proactive measures to mitigate the impact of disasters, at the same time address the challenge of lacking information of local hazardous zone in the development of DRM plans.

Furthermore, integrating disaster preparedness education into school program can bring lifelong skills and habits for Vietnamese youth, fostering a culture of resilience from an early age.

2. Enhancing Infrastructure for Disaster resilience

Japan's emphasis on resilient infrastructure, such as earthquake-resistant buildings and tsunami barriers, flood gates, etc., underscores the importance of investing in infrastructure that can withstand natural hazards. Viet Nam can apply this lesson by prioritizing infrastructure projects that are resilient to typhoons, floods, and landslides.

Japan's extensive use of evacuation signs in emergency situations serves as a valuable example from which Viet Nam can learn, particularly in managing floods and typhoons. Throughout Japan, evacuation signs are prominently displayed in public spaces, including streets, parks, and residential areas, providing clear guidance on evacuation routes, assembly points, and emergency shelters. Viet Nam commonly utilizes community houses as temporary shelters during floods and typhoons. These community structures serve as essential hubs for local residents seeking refuge from

extreme weather events. By adopting a similar approach, Viet Nam can develop clear and standardized evacuation signage systems would empower Vietnamese communities to respond effectively to emergencies, reducing the risk of loss of life and property damage. Additionally, educating the public on the meaning and significance of these signs through awareness campaigns and community outreach programs would further reinforce their effectiveness in disaster response and mitigation.

Another valuable initiative that Viet Nam can learn from Japan is the utilization of road rest areas, known as **Michi-no-eki**, as DRR facilities. In Japan, Michi-no-eki serve as more than just rest stops for travelers; they are also equipped with various amenities and resources to support communities during emergencies. Strategically positioned along highways and main thoroughfares, these facilities attract a high volume of daily visitors and travelers. By repurposing existing infrastructure like road rest areas into multi-functional DRR facilities, Viet Nam can enhance its disaster preparedness and response capabilities. These facilities can serve as evacuation sites, distribution centers for relief support from the government and NGOs, and coordination hubs for emergency response teams. In normal time, they can also offer valuable DRR information by integrating past disaster lessons, support and disaster prevention measures of the localities. By adopting this approach and collaborating with relevant ministries and neighboring authorities, Vietnam's localities can effectively reduce financial burdens while still leveraging existing infrastructure to develop resilient and adaptive systems.

Figure 22 : DRR archive and past disaster exhibition in Michi-no-Eki Patio, Niigata

Figure 23 : Michi-no-Eki Arai, Myoko, Niigata which functions as emergency shelter for people in the Noto Peninsula earthquake January, 2024

3. Strengthening Public-private partnership

In Japan, public-private partnerships play a crucial role in disaster management, leveraging the strengths and resources of both government entities and private sector organizations to enhance preparedness, response, and recovery efforts. These partnerships are founded on the recognition that effective disaster management requires collaboration across various sectors to address complex challenges comprehensively.

One notable example of public-private partnership in disaster management in Japan is the Japan's Bosai platform (JBP). This platform would serve as a forum for

fostering Public-Private Partnerships and sharing innovative solutions in disaster management. Taking cues from Japan's effective strategies, Vietnam can develop a platform for Disaster Risk Reduction (DRR) companies to facilitate collaboration between government entities, private sector companies, NGOs, and academia to address disaster risks collectively.

Japanese companies also proactively involvement in DRM. Many Japanese corporations actively contribute to DRR efforts by implementing measures to mitigate disaster risks, ensuring business continuity, and supporting community resilience. For example, expressway companies in Japan (Nippon West Expressway, Hanshin Expressway, etc.) prioritizes disaster countermeasures for road infrastructure as part of their comprehensive disaster prevention plan. Several companies such as Weather News Inc., Tokio Marine Holdings, Inc., etc. actively contribute to disaster management efforts, leveraging their expertise, resources, and technology to enhance preparedness, response, and recovery initiatives, by providing real-time weather updates, early warnings, and risk assessments for various natural hazards; or investing in risk assessment and mitigation strategies to reduce the impact of disasters on insured properties and support recovery efforts.

Viet Nam Law on Natural Disaster Prevention and Control establishes the rights and responsibilities of businesses in DRM, granting them the authority to engage in multi-purpose natural disaster prevention and control projects in accordance with government plans and regulations. This legal framework provides a solid foundation for Public-Private Partnership collaboration in DRM, facilitating joint efforts between businesses and government agencies to enhance resilience against natural disasters. There is a need for greater advocacy from central and local governments to encourage businesses and potential sponsors to actively participate in this critical area. Increased collaboration and investment from both public and private sectors will be essential in effectively addressing the growing challenges posed by natural disasters and building a more resilient society.

Business Continuity Planning (BCP) is a comprehensive strategy essential for mitigating the impact of natural disasters on businesses. Japanese companies prioritize risk assessment, infrastructure resilience, employee training, supply chain continuity, regulatory compliance, and collaboration to ensure business continuity and resilience. Japanese Government actively promote BCP adoption among businesses, providing guidance, resources, and incentives to encourage compliance.

Nearly 90% of Vietnamese businesses are impacted by natural disasters, with 60% experiencing significant financial losses and 5% facing the threat of bankruptcy, according to a survey conducted by the Asia Foundation. These statistics highlight the prevalent passive approach among businesses when confronted with emergency situations arising from natural disasters. Despite the pervasive risks posed by such events, many businesses have yet to adopt proactive measures to mitigate their impact. This underscores the urgent need for businesses in Vietnam to shift from passive responses to more proactive strategies in disaster preparedness and risk management.

In 2020, the Viet Nam Chamber of Commerce and Industry (VCCI) had provided BCP guidelines to assist businesses in Viet Nam in preparing for and mitigating the impact of disasters and disruptions.[16] However, implementing BCP in Viet Nam faces many challenges, such as limited awareness and resources, complexity of risk assessment, regulatory compliance ambiguity, infrastructure constraints, cultural factors, and supply chain complexity, since most of Vietnamese enterprise is medium and small enterprise.

4. Developing Inclusive DRR plan

On April 28th, 2021, Japan's House of Councilors passed the "Bill for the Partial Revision of the Basic Act on Disaster Management etc." This bill was subsequently promulgated on May 10th and enforced on May 20th, 2021, under Law number 30. As a result of this amendment, Japanese local governments are now mandated to develop *individual evacuation plans* for vulnerable populations, including people with disabilities and the elderly, who face significant challenges during disasters.

Figure 24: Beppu City Inclusive DRR drill (Source: Cabinet Office News)

In line with this legislative change, Beppu City has been at the forefront of promoting "inclusive DRR plan" since 2016. Through collaboration with government agencies, individuals with disabilities, the elderly, welfare professionals, and local residents, Beppu City has been implementing comprehensive disaster prevention initiatives that prioritize inclusivity and accessibility. The results of these efforts are the amendments to the Basic Act on Disaster Management, reflecting the importance of inclusive approaches in disaster preparedness and response strategies.

Viet Nam can adopt a collaborative approach similar to Beppu City's project, involving government agencies, individuals with disabilities, the elderly, welfare professionals, and local residents in disaster prevention initiatives. Collaboration ensures that diverse perspectives and needs are taken into account. Although an inclusive DRR plan may not be obligatory presently, it should be actively promoted within communities and localities through CBDRM workshops or local gatherings. This proactive approach aims to prevent the exclusion of any group, ensuring that no one will be leaved behind.

[16] https://vca.org.vn/upload/file/finalmarquette-xay-dung-ke-hoach-kd-002.pdf

5. Enhancing cooperation and coordination in developing DRM Plan:

In Japan, the development of the DRM Plan will be taken by the consultation with the support from the Government official. This collaborative approach ensures that the DRM Plans are widely consulted and more practical, as they incorporate diverse perspectives beyond just government staff.

Japan also has a platform where local government officials collaborate to support the development of prefectural and municipal disaster prevention plans. This platform serves as a forum for exchanging information and sharing experiences related to the creation of these plans. An example of such collaboration occurred on October 21, 2020, with the "Opinion Exchange Meeting" held in Kobe City, Hyogo Prefecture. At this event, local government officials involved in the creation of local disaster prevention plans shared their experiences and insights, with the participation of consultants and experts in the field[17]. Viet Nam can benefit from Japan's experiences and achievements in disaster management by applying similar strategies and adapting them to its own context.

Regular revisions of disaster plan at both the national and local levels are essential, informed by lessons learned from past disasters both within and outside the region. Japan's disaster plans are revised regularly to ensure they remain up-to-date and effective in addressing evolving risks and challenges.

At the national level, Japan's Basic Plan for Disaster Management is reviewed every five years, with interim revisions made as necessary to reflect emerging priorities and developments. Additionally, prefectural and municipal governments regularly review and update their own DRM plans in accordance with national guidelines and local needs. These revisions often involve consultations with relevant stakeholders, including government agencies, local communities, and experts in disaster management.

Vietnam can adopt regular plan reviews, prioritizing lessons learned from past disasters, and engage diverse stakeholders in national and local planning efforts. Flexibility should also be considered, recognizing that plans may need to be adjusted in response to evolving risks, technology, and socio-economic factors.

[17] White Paper on DM, Japan 2023 - Cabinet Office, Government of Japan

CHAPTER 6: RECOMMENDATIONS

While Vietnam may not have community-level DRM plans like Japan, it can leverage the concept of CBDRM as a form of community plan. By promoting CBDRM and incorporating best practices from Japan and other countries, Vietnam can enhance its disaster preparedness and resilience at the grassroots level. This approach would involve actively engaging local communities, leveraging their knowledge and resources, and tailoring disaster response strategies to address specific risks and vulnerabilities within each community.

Drawing lessons from Japan's emphasis on resilient infrastructure, particularly in disaster-prone areas like Central Vietnam, the DRM plan should prioritize measures such as reinforced buildings, elevated roads, and improved drainage systems, while also promoting construction initiatives tailored to the local characteristics.

The local authorities in Vietnam can aslo gain significant advantages by enlisting the services of a consultant to develop a thorough local DRM plan. This brings precise insights from experts in the field, aiding in the identification and evaluation of particular risks, and suggesting strategies for mitigation and prevention. Moreover, engaging a consultant helps ensure that the DRM plan is developed according to international standards and best practices from other countries and regions.

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