

**ASIAN DISASTER REDUCTION CENTER Visiting
Researcher Program (FY2021)**

COUNTRY REPORT

ADRC visiting researcher
THAI MINH HUONG
Department of Science Technology and International Cooperation
Viet Nam Disaster Management Authority

Contents

I. GENERAL INFORMATION.....	3
II. DISASTERS IN VIETNAM	3
1. Background	3
2. Institutional Arrangements for disaster risk management in Vietnam	4
2.1 The Global Legal Basis for Disaster Risk Management	4
2.2 The Legal Basis for Disaster Risk Management in Vietnam	5
3. Organizational structure for Disaster Management of Vietnam	5
The National Steering Committee for Disaster Prevention and Control	7
4. History of Natural Disaster.....	9
5. Disaster mapping and zoning.....	15
III. OPPORTUNITIES AND CHALLENGES.....	18
1. OPPORTUNITIES	18
DRM drawn attention of the Communist Party and Governments from the central to the local levels.	18
Disaster risk reduction is integrated into the socio-economic development plans at all sectors and levels.....	18
Individuals and organizations actively participating in DRM.....	19
Capacity building for DRM staff	19
Communication and information sharing	19
Promoting science and technology in DRM.....	20
Promoting international cooperation in disaster risk management.....	21
2. CHALLENGES	22
Awareness on disaster risk reduction	22
DRM related laws, regulations, policies and cost norms	22
Inconsistence on the organizational structure, roles, functions and tasks of DRM agencies at all levels.....	24
Disaster risk management infrastructure	24
Disaster risk management planning	25
Community awareness raising.....	26
Information and communication.....	26
Science and technology.....	26
International cooperation	26
Financial resources.....	27
IV. KEY TASKS ON DISASTER RISK MANAGEMENT IN VIETNAM	27
The direction of the Party, Government on natural disaster prevention and control implemented in consistent, effective and efficient manners.....	27
Consolidate the legal system and policies on natural disaster risk management	28
Enhance the capacity of natural disaster forecasting, warning, and monitoring in a timely and reliable manner.....	28
Mobilize resources and efficiently use for the prevention, response and recovery of consequences of natural disasters.....	29
Enhance the role and capacity of state management on DRM	29
Promote science and technology and international cooperation on disaster risk management	30

I. GENERAL INFORMATION

Vietnam is located in Southeastern Asia, bordered with China, Lao PDR and Cambodia. Vietnam comprises a total land area of 33,210 km² including 310,070 km² of land and 21,140 km² of water. 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.

Vietnam 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.

Vietnam's population is estimated to be 98.7 million people (as of December 2021). 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. Vietnam 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%.

II. DISASTERS IN VIETNAM

1. Background

Vietnam 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 such as storms, floods, landslides, drought, water intrusion and coastal erosion. Vietnam also faces low to moderate risks of droughts, earthquakes, cold and heat waves.

In addition, Vietnam 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.

According to the Law on Natural Disaster Prevention and Control 2020, Vietnam experienced 22++ types of disaster including tropical storms, tropical depressions, strong breezes at seas, tornadoes, lightning, heavy precipitation, floods, flashfloods, inundations; landslides and land subsidence caused by floods or runoff or droughts; water rise, saltwater intrusion, extreme heat, droughts, wildfires, cold under 13 degree Celsius, hails, frost, fog, earthquakes, tsunamis and other types of natural disasters. Among them, floods, storms and landslides are the recurring natural disaster and claimed for the most damages.

Disaster Type	Disaster Subtype	Events Count	Total Deaths	Total Affected	Total damage ('000 US\$)
Drought	Drought	6	0	7,860,000	7,399,120
Epidemic	Others	1	16	83	0
	Bacterial disease	1	598	10,848	0
	Parasitic disease	1	200	0	0
	Viral disease	8	395	97,027	0
Flood	Others	16	1,012	2,011,287	160,055
	Coastal flood	6	804	4,353,316	749,000
	Flash flood	13	481	912,607	516,700
	Riverine flood	52	3,644	25,637,158	2,896,407
Landslide	Avalanche	1	200	38,000	0
	Landslide	4	109	40	0
	Mudslide	1	21	1,034	2,300
Storm	Others	10	323	219,280	145,035
	Convective storm	8	160	4,513	10,100
	Tropical cyclone	92	18,869	53,272,568	9,967,657

Figure 1: Summary of natural hazards and their human and economic impacts between 1990 and 2020.

Source: Climate Risk Profile: Vietnam (2021), World Bank

2. Institutional Arrangements for disaster risk management in Vietnam

2.1 The Global Legal Basis for Disaster Risk Management

The Sendai Framework for Disaster Risk Reduction 2015-2030

The third UN World Conference on Disaster Risk Reduction (WCDRR) took place from March 14 to 18, 2015 in Sendai, Japan. The outcome of the WCDRR was the adoption of the Sendai Framework for Disaster Risk Reduction 2015-2030, which comprises of 7 global targets and 4 priorities for action.

The ASEAN Agreement on Disaster Management and Emergency Response

The ASEAN Agreement on Disaster Management and Emergency Response (AADMER) aims to strengthen regional policies on disaster management, enabling member countries in the region to be more active in cooperation, coordination, technical assistance, and resource mobilization in all aspects of disaster management. The overall goal of the AADMER Work Programme is to achieve a substantial reduction of disaster losses in lives and in the social, economic, and environmental assets of ASEAN member states. The AADMER Work Programme primarily adheres to a strategic regional approach to all aspects of disaster management

APEC Emergency Preparedness Working Group

Recognizing that disasters are factors which adversely affect the sustainable economic development of the region, APEC has decided to elevate the Task Force for Emergency Preparedness to the Emergency Preparedness Working Group (EPWG). Viet Nam has actively participated in the working group to draft its strategic framework and actions and has contributed to the establishment of a list of priority projects. Viet

Nam has implemented two projects related to the EPWG's activities: (i) the APEC Capacity-Building Workshop on Search and Rescue at Sea in Nha Trang (2013) and (ii) the APEC Workshop on Community-Based Disaster Management in Response to Climate Change in Quang Ninh (2014). Viet Nam continued to actively contribute to the activities of the group in the years

2.2 The Legal Basis for Disaster Risk Management in Vietnam

- **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 and Control and Law on Dyke Management (Law N0/60/2020/QH14 on 17/06/2020).

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.

3. Organizational structure for Disaster Management of Vietnam

The system of disaster risk management in Viet Nam is shown in the figure below:

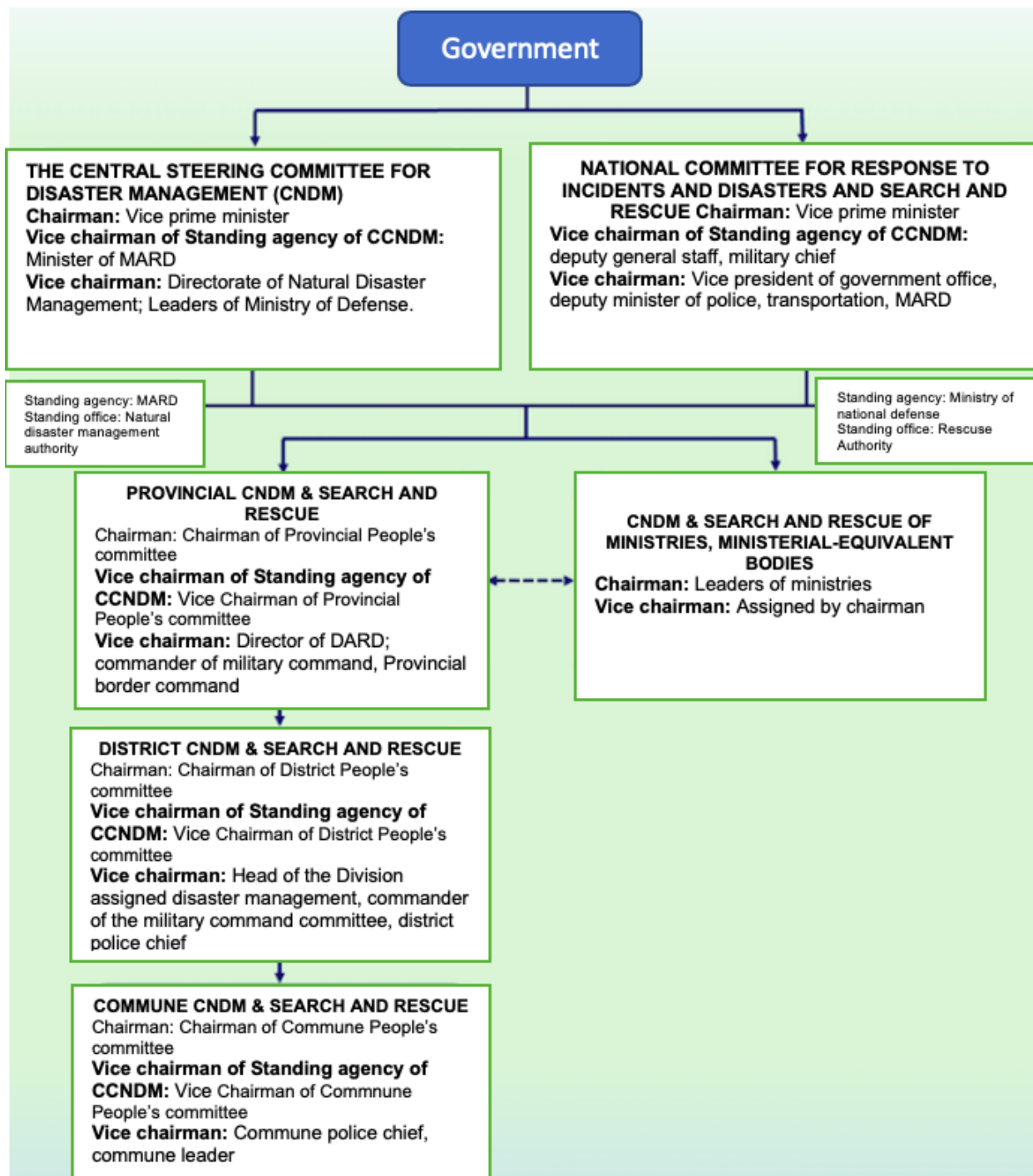


Figure 2 : Systems of DRM in Viet Nam

The National Steering Committee for Disaster Prevention and Control

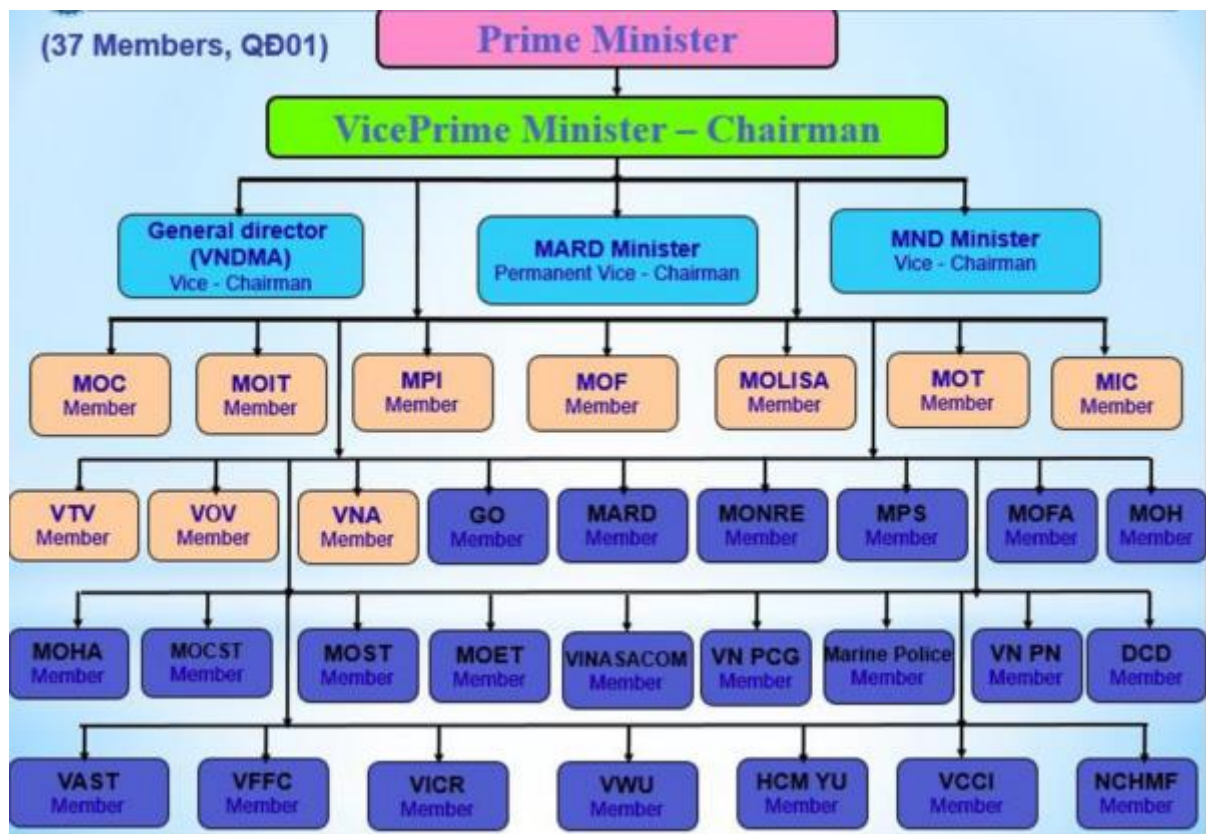


Figure 3: National Steering Committee for Natural Disaster Prevention and Control

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. Members of the National Committee for NDPC:

- a) Chairman: The Deputy Prime Minister
- b) Deputy Chairman, including: Standing deputy head - the MARD Minister, 01 leader of the Ministry of National Defense, and the Director General of Vietnam Disaster Management Authority
- c) Members of the National Steering Committee are representatives that are leaders of ministries, ministerial-level agencies, and Government agencies: MARD, MONRE, Ministry of Defense, Ministry of Public Security, Ministry of Information and Communication, Ministry of Industry and Trade, Ministry of Transport, Ministry of Construction, Ministry of Education and Training, Ministry of Health, Ministry of Culture, Sports and Tourism, Ministry of Foreign Affairs, Ministry of Labour, War Invalids and Social Affairs, Ministry of Planning and Investment, Ministry of Finance, Viet Nam Television, Voice of Viet Nam; representatives of some units of MARD, MONRE, Ministry of Defense, National Committee for Search and Rescue, and the Viet Nam Academy of Science and Technology.

d) Based on work requirements, the Head of the National Steering Committee for NDPC invites representatives from the following organizations: the Central Committee of the Viet Nam Fatherland Front, Viet Nam Women's Union, Ho Chi Minh Communist Youth Union, Viet Nam Red Cross, and other relevant organizations to participate in the Central Steering Committee on DPC.

MARD is the permanent body of the Central Steering Committee on DPC, performing the tasks of state management on NDPC. The ministry uses the apparatus and staff of the Vietnam Disaster Management Authority to serve as the Standing Office of the Steering Committee.

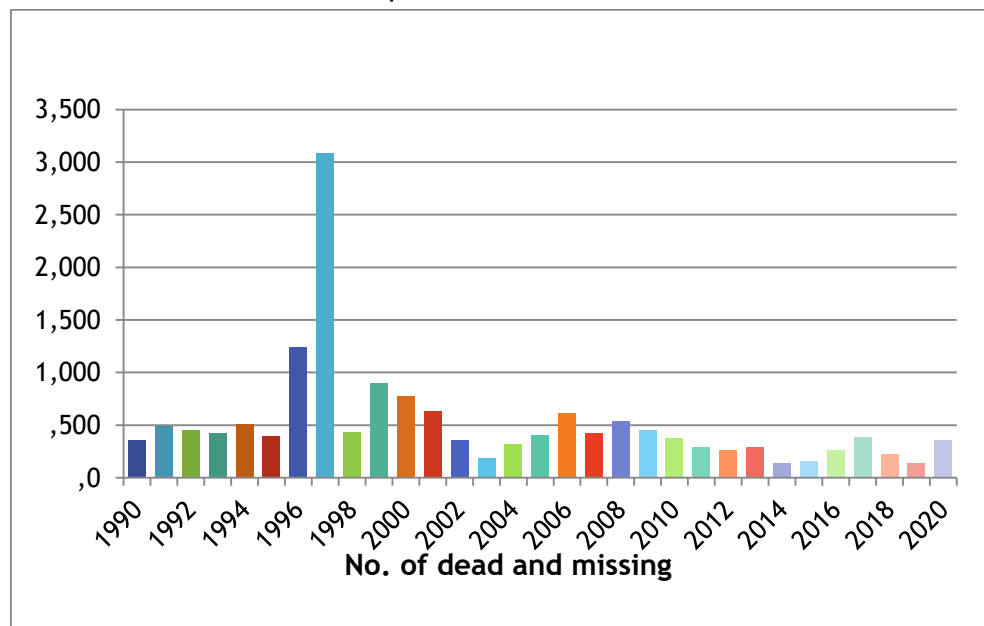
The mandate of the NSCNDPC is wide-ranging from policy and planning to directing disaster response, and includes the following responsibilities:

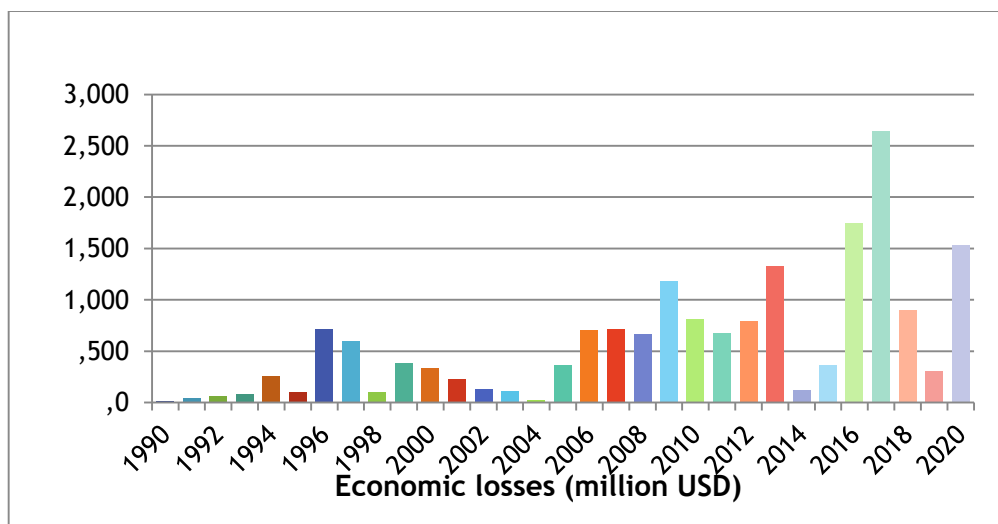
- Provide guidance for the formulation and implementation of national strategies and plans, and policies and laws on natural disaster management;
- Preside over the preparation of disaster response plans;
- Direct and coordinate disaster response and recovery nationwide: direct response to “Level 3” 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. History of Natural Disaster

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.





The following is a list of major disaster occurred in Vietnam in the last ten years and its damages and losses.

October 2021 – Floods and Tropical Depression

Floods and landslides caused by heavy rain affected northern and central Vietnam, 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 Vietnam, and power outages were reported in Thua Thien-Hue Province.



Figure 4: Dong Giang District, Quang Nam province severely flooded in October 2021

September 2021 – Storm Conson

Storm Conson triggered flash floods in central Vietnam, which resulted in two fatalities, hundreds of houses damaged, and over 1,000 hectares of rice field destroyed. The most affected provinces were Quang Ngai, Quang Tri, Kon Tum, and Gia Lai. Rough seas caused problems for ships and 18 people were rescued from two ships that ran aground.

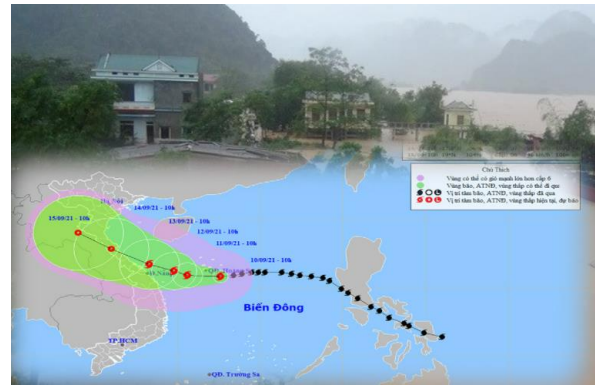


Figure 5: Tracks of Con Son Typhoon.

October to November 2020 – Central Vietnam Floods

In October and November 2020, Vietnam 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 Vietnam, 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. 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.

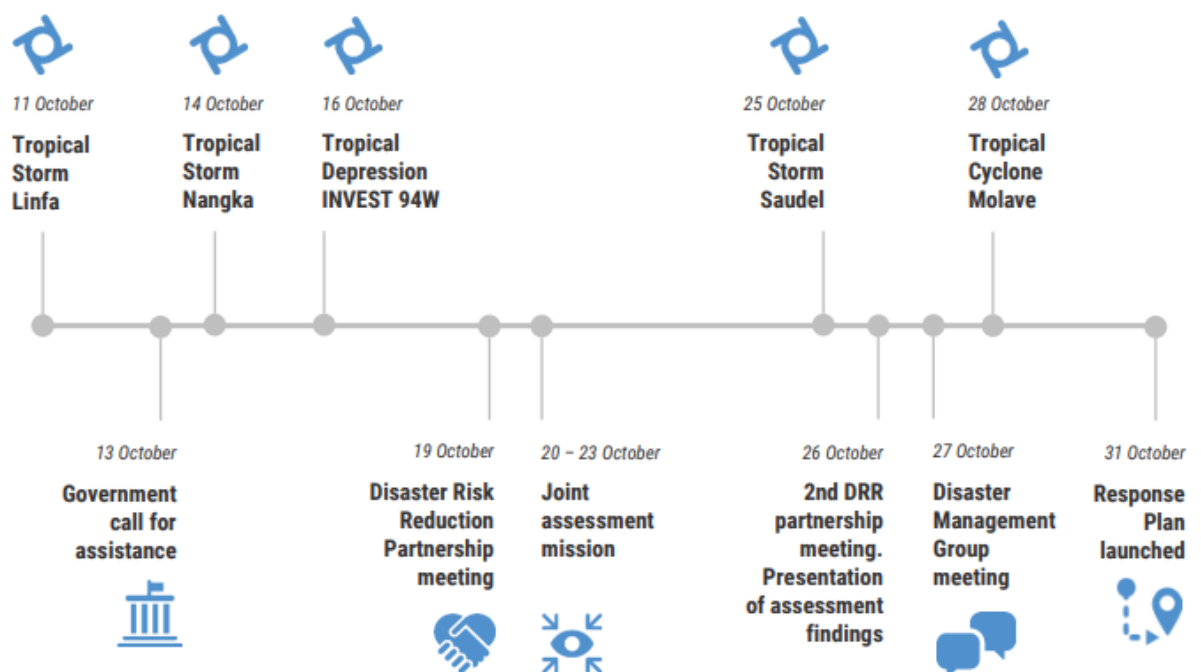


Figure 6: Timeline of key events from 11 October to 31 November 2020

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. The Vietnamese Government declared a state of emergency in seven of the 14 affected central provinces.



Figure 7 : Flooding in Tuyen Hoa & Le Thuy districts, Quang Binh province

August 2020 – Floods and Landslides

Heavy rains, floods, flash floods, and landslides impacted 13 provinces and cities in northern Vietnam, resulting in seven deaths, 1 missing, over 1,000 damaged houses, and over 2,000 hectares of rice and crop destroyed.



Figure 8 : Searching for missing people in Tra Leng and landslides at National Defense Economic Mission 337

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.



October 2019 – Typhoon Matmo, Floods, and Landslides

Typhoon Matmo passed over central Vietnam 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. In the same month, heavy rain caused flooding in other parts of central Vietnam 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.

September 2019 – Tropical Cyclone Podul

Tropical Cyclone Podul made landfall over Quang Binh Province in central Vietnam on 29 August with maximum sustained winds of 55-65 km/h (XX mph). Six people died as a result of wind-induced damage and flooding.

August 2019 – Floods

Following torrential rains, in August 2019, several provinces in the central highlands and southern region were flooded. The worst affected provinces were Kien Giang, Lam Dong, Dak Lak, and Dak Nong. Other provinces affected include Gia Lai, Kon Tum, Dong Nai, Binh Thuan, and Binh Phuoc. The disaster resulted in 11 deaths and one missing person, five injuries, and over 1,985 people evacuated. In total, 12,307 houses were flooded.

August 2019 – Floods

In August 2019, Phu Quoc, a popular tourist destination island, experienced the worst flooding in its history. Within seven days, Phu Quoc received more than 1m (39 inches) of rain, while the average annual rainfall on the island is 3m (118 inches). The heavy rainfall flooded 8,424 houses and caused damages totaling US\$4.6 million.

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 typhoon also submerged 5,296 ha of paddy fields and nearly 15,000 ha of vegetables and fruit fields.

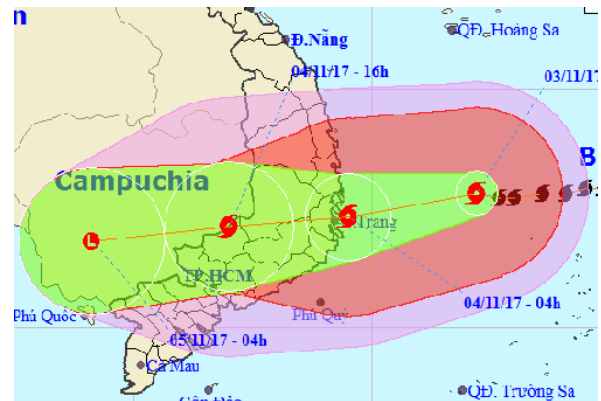


Figure 9: Damrey Typhoon Track



Figure 10: Damages caused by Damrey Typhoon in Khanh Hoa Province

June - August 2017 - Floods

Heavy rain triggered flash floods and landslides in four northwestern Vietnamese provinces, which left 27 dead, 14 people missing, and 231 houses washed away or collapsed. In addition, landslides damaged 425 houses and about 340 ha of agricultural land.

2015-2017 - Drought

The worst drought Vietnam 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 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.

August 2016 - Floods and Landslides

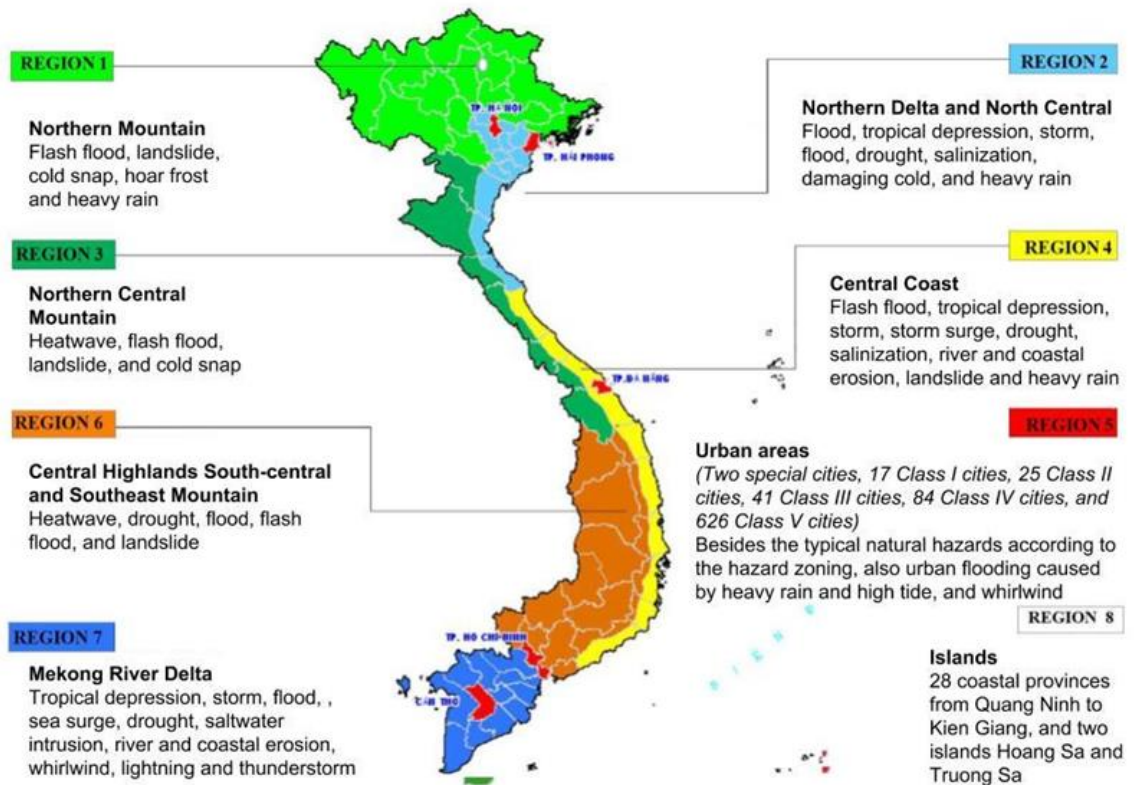
Tropical Storm Dianmu triggered floods and landslides in Yen Bai, Phu Tho, Lai Chau, Dien Bien, Son La, Hoa Binh, and Thanh Hoa provinces. At least nine people were reported to have died, and 1,341 houses were inundated in the first month. By December 2016, it was reported that 134 people had died, 151 people were injured, 233,271 houses flooded, and 4,093 houses were damaged or collapsed.

November 2013 - Floods

A tropical depression hit the south-central provinces of Vietnam, which felt heavy rains and strong winds. As a consequence of the heavy rain, extensive flooding affected the central provinces of Quang Nam, Quang Ngai, Da Nang, Phu Yen, and Binh Dinh

5. Disaster mapping and zoning

Viet Nam developed disaster maps early on – an area of disaster risk assessment that Viet Nam places a great importance on. Disaster zoning was used in the Disaster Prevention and Control Strategy.



Disaster zoning helps Viet Nam to identify priority groups of measures for each region. In the context of resource and capacity constraints, prioritize measures help Viet Nam address the most urgent and pressing problems when disasters occur.

However, the lack of analytical assessments of vulnerability and exposure has resulted in not producing optimal solutions to disaster prevention and control for vulnerable groups in communities, and lack of the most practical solutions to their problems. At the same time, disaster zoning puts forward disaster prevention and control measures with the focus on only hard technology measures, without taking into account endogenous options – such as promoting people’s capacities and awareness on disaster prevention and control and risk reduction, which renders some investment solutions to disaster prevention and control quite expensive.

Currently, the Government of Viet Nam is gradually mapping disaster events nationwide in more detail for each type of disaster such as flash floods, landslides, floods, typhoons, super storms, etc.

Developing these maps requires significant financial and technical resources as well as a reasonably competent organizational apparatus for managing, constantly updating, analyzing and sharing mapping results with agencies and localities. Most of the current disaster maps are geographically dispersed and not nationwide.

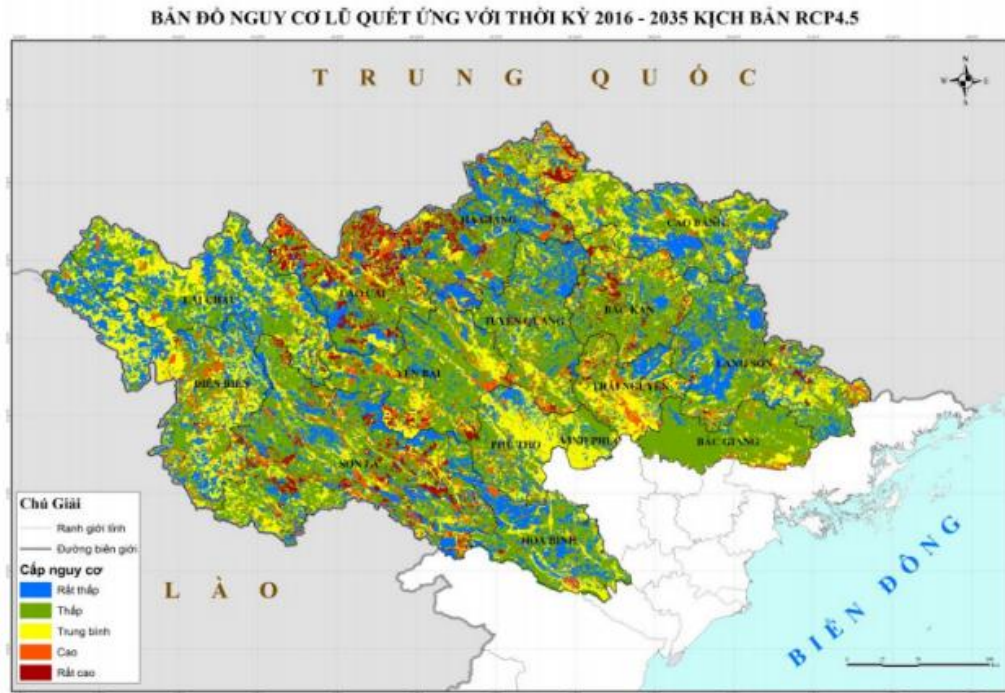


Figure 11: Flood disaster map in the period of 2016 to 2035

Source: IMHEN, Ministry of Natural Resources and Environment – 2016

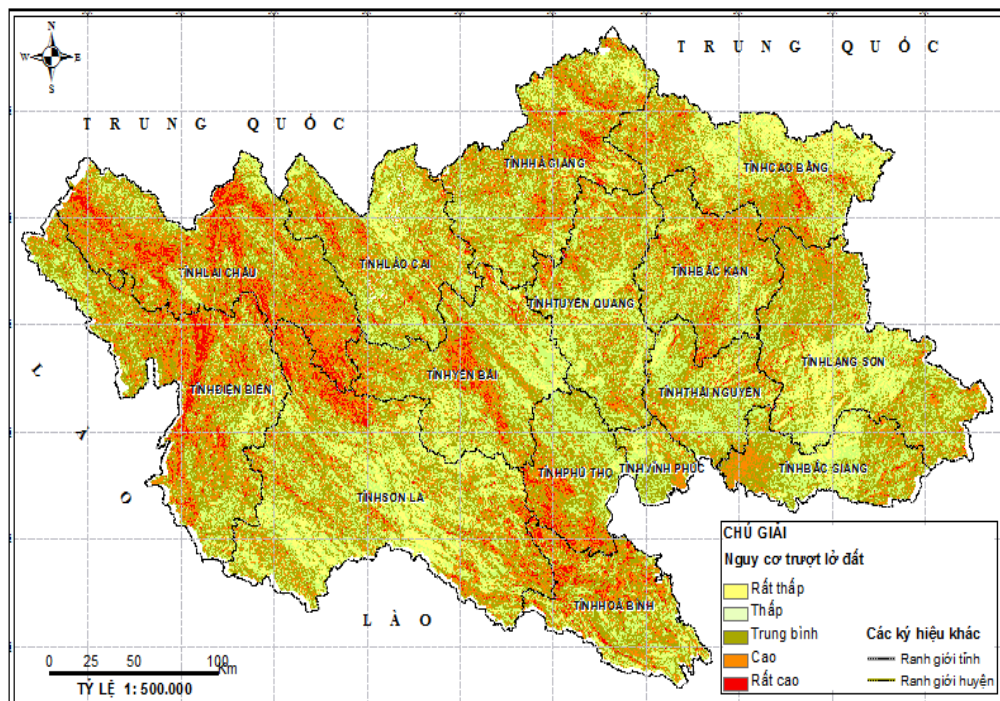


Figure 12 : Landslide disaster map under climate change scenario 2050

Source: Institute of Geosciences and Mineral Resources, Ministry of Natural Resources and Environment – 2016

III. OPPORTUNITIES AND CHALLENGES

1. OPPORTUNITIES

DRM drawn attention of the Communist Party and Governments from the central to the local levels.

During the 2020 - 2021, several under law documents have been issued for the purpose of strengthening the disaster risk management from Central to local levels.

For the first time, the Politburo issued the Directive on strengthening the Party's leadership in disaster preparedness, response and recovery (Directive 42-CT/TW dated March 24/2020). The Conference to review the DRM operations chaired by the Prime Minister, Deputy Prime Minister - Head of the National Committee was successfully organized in the years of 2020 and 2021.



Figure 13 : The Prime Minister made a speech directing the National Conference

Disaster risk reduction is integrated into the socio-economic development plans at all sectors and levels

The DRM contents were integrated into the strategies, plans and activities at all sectors and levels. In 2020, the **National Coordination Office for New Rural Development Program** has coordinated to promote the combination of resilient communities and new rural development activities. The Central Steering Committee of National target program on the new rural development has coordinated to build 08 successful DRM models at commune level in the regions which will be replicated across the country.

Individuals and organizations actively participating in DRM

The period 2020-2021 has witnessed the proactive participation of organizations and individuals in disaster risk management process. For example, when receiving the information of Typhoon No. 9's landfall, fishermen in provinces such as Phu Yen, Khanh Hoa ... proactively implemented prevention plans by tightening open rafts, even bringing raft cages ashore to minimize damage. Similarly, in the Mekong Delta, in order to proactively respond to saltwater intrusion, people have changed the structure of crops and livestock to turn "challenges" into "opportunity".

Capacity building for DRM staff

The capacity building for on-duty staff, guiding the development of processes on-duty information, reservoir operation, disaster response management, databases ... are carried out regularly to improve the professionalism and efficiency in the on-duty responses to emergency disaster situations.

National Program 553 (previously is the Program 1002) on community awareness raising and community-based disaster risk management are continuously implemented.

In 2020 and 2021, the first Disaster Response Team Gameshow was successfully organized with the participation of disaster-prone provinces and cities in the country. The contest aims to raise public awareness on DRM-CCA by integrating knowledge and skills in the form of new and attractive game-shows.

Communication and information sharing

Information, communication and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. Recent technology has advanced to aid predicting and alerting of disasters around the world which has resulted in early warning and evacuation measures as well as opportunities to react and prepare for incoming threats to countries.

- Every year, about 100,000 articles from central and local news agencies were published reflecting the situation of natural disasters, provide timely, accurate and effective information on disaster response to people across the country.



Figure 14: Former MARD Minister Nguyen Xuan Cuong and UNDP representative presented the National Press Award

- The Facebook page on DRM information continue to be effective: an average of interactions of 80 million people in the month is recorded



Promoting science and technology in DRM

Science and technology has many new changes and integrated into the database for advising and directing DRM activities to meet the following needs: Supervision and executive direction; Monitoring data management; Static data management (to be updated periodically and annually). The system is connected to related databases and systems such as: information on operation of hydroelectric reservoirs and irrigation reservoirs; information on supervision of fishing vessels; information from enterprises,... monitor all information of 2,700km of dikes managed by the central government; real-time operation status of 6,995 reservoirs (including 176 hydroelectric reservoirs managed by

the Ministry of Industry and Trade, 69 hydroelectric reservoirs managed by EVN Group and 6,750 irrigation reservoirs; location information of nearly 26,000 boats, 67 storm shelters; current status of 1,417 erosion points.

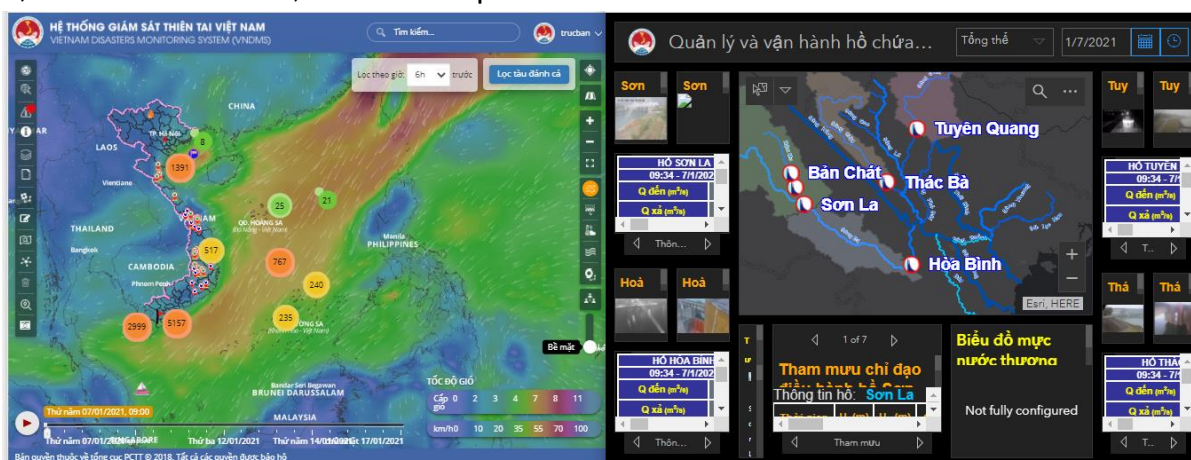


Figure 15 : VNDMS disaster monitoring system and inter-reservoir management software for Red River basin

Construction of DRM works using new technologies.



Figure 16 : Cai Lon – Cai Be irrigation system under construction

Promoting international cooperation on disaster risk management

Promoting international cooperation through several agreements and commitment of Vietnam such as Sendai Action Framework, ADDMER, international platform, Mekong River Commission...; in close coordination with multilateral financial institutions, organizations and United Nations agencies.

In 2020, the Disaster Risk Reduction Partnership was established with the membership of 22 international organizations and NGOs. The Partnership has played a leading role in information sharing, calling for the support of partner members in responding and overcoming special disaster consequences during major natural disasters such as: the

2019-2020 drought and saltwater intrusion (total funding of more than \$1 million USD in relief to the people in the Mekong Delta) and 2020 historical flooding in the Central region (total funding of USD 25 million USD).



Figure 17 : Mobilizing and supporting people in Central provinces damaged by floods

2. CHALLENGES

Awareness on disaster risk reduction

Awareness of local authorities and communities on DRR is still limited. Thus the investment on the consolidation and strengthening of administration apparatus, mechanisms and policies or in the integration of socio-economic development contents into socio-economic development activities (SEDP) are not adequate.

Some localities are not fully aware of deforestation of mangroves or the over-development of dams and reservoirs in the upstream, groundwater overexploitation, water depletion etc. which have resulted in increasing floods, droughts, saltwater intrusion, landslides, erosions, land subsidence.

Organizations and experts involving in DRM do not have full knowledge and understanding of underlying causes of some types of natural disasters under climate change impacts, or impacts of socio-economic activities in both upstream and downstream areas. Long-term, substantial and sustainable solutions to such problems have not been worked out.

People are also not fully aware of disaster risks, especially their production practices have led to increased risks and disaster losses. Majority of people do not realize the importance of investments in and contributions to DRM to protect their own lives and businesses.

DRM related laws, regulations, policies and cost norms

Systems of DRM related laws, regulations, policies and cost norms have many gaps and are not consistent and synchronous:

- The Law on Natural Disaster Prevention and Control (DRM Law) has been developed and promulgated. However, but there are still many shortcomings and limitations in terms of contents, subject of application and scope of application, including: disaster zoning is only applied for earthquakes, tsunamis and storms and tropical depressions; the classification of disaster risk levels is not applied for riverbank and coastal erosion; some disaster risk levels of floods, inundation, storms, droughts and saltwater intrusion are not well defined and relevant in accordance with Government's directions;

Disaster risk assessment has not been implemented; sanctions to administration violations to DRM and dyke management legal regulations have not fully handled; disaster recovery regulations have not been adequate;

The enforcement of DRM laws and regulations has many gaps and shortcomings etc. The integration of DRM issues into development plans and plannings of local authorities and sectors are not effectively conducted; among challenges and limitations are the collection and spending of DRM Funds, management of ships and boats before sailing offshore, or some inter-reservoir operation procedures are not promptly reviewed and revised.

- Relevant mechanism and policies are not synchronized or necessary ones are not timely issues; especially those relate to financial management or integrate of DRM issues into SEDPs or sector development plans, the participation of community in DRM etc.

DRM plans and activities are mainly developed by state agencies. The construction, maintenance, operation and management of DRM works are not crowdfunded.

Although disasters are becoming more complicated and fierce, together with rapid socio-economic growth, necessary DRM mechanisms and policies have not been issued or amended to adapt to the situation, including risk finance, disaster insurance, disaster relief, or incentives to investments and construction of DRM works.

DRM Plans exposes many inappropriate contents, including both planning and implementation phases. Integration approach is not effectively adopted, e.g. integrated flood management or integrate river basin management and multi-purposed works are not well exploited and operated, especially the combination of irrigation and transport works.

Necessary projects, programs and researches are not promptly launched to meet practical needs; human and physical resources are inadequate to input the development and implementation of disaster management solutions, including DRM capacity building at national level.

DRM related specifications and technical norms are not timely and appropriately adapted to the current situation, especially in the context of climate change impacts. The

applicability and scope of application of these national technical norms and specifications are limited, especially those relate to social resilience in disasters. The management, updating and sharing of disaster database are not well operated and managed, such as information and data relating to hydrology, marine, sediment, channel developments, coastal stabilization etc. Moreover, socio-economic databases are insufficient and are not disaggregated by gender, age and disability for decision making support.

- Sanctions to DRM violations are insufficient and not strong enough, especially to violations to disaster safety control of infrastructure, urban areas, residential areas, roads etc. Mineral exploitation, especially the exploitation of sand and gravel, the encroachment on river beds and floodplains etc. still have many shortcomings and are not well managed.

- The procedures for receiving disaster reliefs and aids to recover disasters in emergency situations remain complicated and do not ensure timely delivery and thus reduce the efficiency of such disaster reliefs. It is especially true in the case of recovery supports from the national state contingent budget and reserves. Some localities are found slow and inefficient in disbursing state funding to recover disaster damages and losses.

Crowdfunding policies and mechanisms for DRM are not popular and not yet attract the active participation of private sector in the sector. Disaster risk insurance policy has not been widely applied so that disaster affected people can be compensated for disaster damages and losses.

Inconsistence on the organizational structure, roles, functions and tasks of DRM agencies at all levels

Professional capacity of DRM staff is limited, especially at district and commune levels. DRM human resource at all level lack supporting tools to ensure the execution of their tasks and duties, especially field activities or in dangerous situations endangering lives and properties; disaster management staff at grass root level is not well trained or not well staffed.

Disaster risk management infrastructure

- Hydro-meteorological monitoring and forecasting stations are significantly inadequate with outdated and obsolete measurement equipment. As a result, the forecasting is not sufficient and efficient, failing to meet requirements, especially forecasts of rainfall, localized floods or onshore storms etc. which are not prompt and correct.

- DRM works (reservoirs, dams, embankments, culverts, drought and flood protection works, anchorage areas etc.) are not complete or synchronous. Many works have been degraded and damaged, yet not yet repaired, and failed to protect people and properties in disasters.

- The 1,500 km of river dyke has not been upgraded. 230 vulnerable and damaged sections of dykes, embankments and sluices have not been maintained or repaired¹.

- The sea dyke system has been upgraded under the Sea dyke investment program for provinces from Quang Ninh to Quang Nam and from Quang Ngai to Kien Giang. So far, as many as 887/2,861km (nearly 30%) of sea dykes have been upgraded and renovated, however they are only resistant to medium tides or storms grade 9-10;

- Reservoir system: among 6,750 irrigation reservoirs, 1,200 reservoirs have been built long time ago and become deteriorated. Among them, 200 reservoirs in 36 provinces/cities are seriously degraded and present a risk of failure²;

- Urban irrigation and drainage systems: Many important flood protection works, inundation drainage works or drought prevention structures have been either constructed or repaired or upgraded, especially in the Mekong River Delta, South Central Coast and Central Highlands;

- Anchorages for boats and ships in storms: Over 50% of anchoring areas for ships and boats in storms have not been invested. As a result, up to 83,850 ships and boats have nowhere to anchor safely in disasters.

- River bank and coastal erosion management: 2,358 points of erosion along a total length of over 3,133 km have been surveyed and detected. Among them, 206 points are particularly critical and vulnerable (potential erosions threatening dyke safety, residential areas and important infrastructure behind these dykes) along a total length of 427km.

Disaster risk management planning

- The planning of disaster prone areas is not proper or inadequate, including the relocation of people in the reservoir impoundment or people in flashflood and landslide prone areas in the Northern Mountainous Region.

- The formulation and integration of DRM into SEDPs and other development plans are limited. The planning and construction of urban areas, concentrated residential areas, resorts, infrastructure systems, industrial zones, mineral exploitation, construction and upgrading and expansion of roads in mountainous and midland regions and hydropower reservoirs etc.... do not pay sufficient attention to disaster resilience and safety. As the result, disaster risks are increased. Such works do not have multiple functions to reduce costs and increase investment efficiency. There is also under-risk infrastructure development such as the construction of houses and structures in disaster prone areas or areas having flashflood and landslide risks or fish ponds on hillsides or dykes located next to waterline or resorts built close to the sea etc. Urban development and

¹ Dyke survey data for flood season 2020

² Report No. 6261/BNN-TCTL dated 11 September 2020 of MARD

concentrated residential areas have not reserved water space, yet they increase flooding risk and expand the inundated areas in some cities.

Community awareness raising

Although the Government Program of community awareness raising and community based disaster risk management has been launched for years, results are quite modest. In fact, community awareness on disasters and disaster risk, disaster prevention measures for different types of disasters have been limited, which resulted in disaster damages and losses due to ignorance or lack of disaster response skills.

Information and communication

Efforts on DRM information and communication have been made for many years, yet many shortcomings have been observed. DRM information does not reach local people, especially ones in remote and mountainous villages. The information is especially important when a disaster is coming. Forms and contents of communication activities and propaganda are not diversified without focusing on practical themes guiding the prevention and control of disasters for local people. Communication activities mainly take place during or after a disaster or in a workshop, event or anniversary. Disaster impacts on lives, health, living environments, socio-economic and vice versa impacts of such human made activities on the environment, nature, disaster risk and climate risks.

Science and technology

Scientific and technological research and application in DRM are limited, especially in the management, commanding and operation based on real time. Many R&D tasks relating to DRM issues are not practical and difficult to be applied.

Many types of natural disasters have been identified and understood and as a result substantial solutions have not been worked out given the context of climate change and booming upstream and downstream socio-economic development. The application of new technologies is not effective, especially in real-time management and operation, online disaster operation, decision supporting, remote sensing and construction of DRM works.

International cooperation

International cooperation in DRM has significant changed and improved, yet not up to expectations when many trans-boundary disaster issues have not been addressed, including drought and saltwater intrusion in the Southeast region, Mekong River Delta, water uses along the Mekong River, sharing of Red River upstream flood forecast and warning information. Information sharing for disaster forecast and warning, water resource management, reservoir operations to control flood, preventing and controlling

drought and saltwater intrusion, preventing riverbank and coastal erosion etc. for transboundary river (Red River, Mekong River) have not been regularly implemented.

Financial resources

The financial sources for DRM activities have been promoted, yet the investments have not yet met disaster risk management needs.

- Findings for disaster prevention and recovery efforts are lacking and fail to meet local needs (to cover the construction of DRM works such as river and sea dikes, reservoirs, ship anchorages etc.). The current financing only meets as much as 40% of total needs. Especially, budget contingency for disaster responses and recovery disasters only meets as much as 20% of the demand). Therefore, disaster management is only limited to situation responses other than “build back better” as orientated in the Sendai framework.

- The establishment and maintenance of DRM Fund are delayed. Nearly 2 years following the DRM fund regulation is officially issued, only 39/63 provinces and cities established their DRM fund. Revenues of the DRM fund and its funded activities are controversial in both terms of its structure, contributors, payment etc. As a result. The operation of these DRM funds are quite inefficient and limited. There is currently no DRM fund at national level and the fundraising activities and funding coordination between localities for DRM operations cannot be realized.

- The crowdfunding of DRM operations and participation of private sector in the development of DRM works are not well encouraged. Such cooperation is only limited to some forms of private funds from businesses to support the disaster relief phase. There are also some limited investments in very small-scale DRM works.

- Disaster recovery operations are too slow. Main efforts are focused on immediate solutions to restore people's lives and production rather than substantial and long-term recovery solutions. Regulations on fundraising, receiving, distributing and using voluntary supports and aids from organizations and individuals are not well defined which led to ineffective and inadequate implementation

IV. KEY TASKS ON DISASTER RISK MANAGEMENT IN VIETNAM

The direction of the Party, Government on DMR implemented in consistent, effective and efficient manners.

- Integrate the DRM content into the plans of ministries, and localities to implement
- Review the implementation of Directive 42-CT/TW dated 24/3/2020 of the Communist Party Central Secretariat on the prevention, response and recovery of consequences of natural disasters. In which, focusing on assessing the Party committees and organizations at all levels in identification of the prevention, response and recovery

natural disasters is an important, urgent and regular tasks of the whole political system and social.

- Assess the implementation of the Government's Resolution 76/NQ-CP dated June 18, 2018 on natural disaster prevention and control, and proposing tasks and suitable solution adjustments to meet requirement from natural disaster programs and plans in the future.

- Develop a plan to implement the National Strategy on Natural Disaster Prevention, Response and Control to 2030, with a vision toward 2050 and the Government Program on community awareness raising and community-based disaster risk management toward 2030.

- Develop national, regional, sectors, provincial, and residential plans for prone-area to natural disasters, especially storms, floods and flash floods, landslide, inundation, river and coastal erosion.

- Strengthen communication combining with traditional methods with multimedia to transmit accurate and timely information on natural disasters in accordance with natural disaster characteristics of region, beneficial subjects with consideration on those who are vulnerable.

Consolidate the legal system and policies on disaster risk management

- Complete the mechanism on disaster risk insurance, forecasting and monitoring service, and natural disaster risk impacts assessment.

- Allocate dedicated budget line for natural disaster risk management

- Review mechanisms, policies on natural forest management and protection; Continue planting and regenerating protective forests and coastal mangrove forests to minimize the impact of changing of the natural equilibrium state of hills, mountains, rivers, streams and coastal strips.

Enhance the capacity of natural disaster forecasting, warning, and monitoring in a timely and reliable manner

- Prioritize investment in basic research on disaster, hydrological forecasting systems, and standard and modern disaster monitoring systems.

- Strengthen review and update activities on climate change scenarios, sea level rise, long-term forecasts on natural disasters and water sources, especially for transboundary rivers.

- Review, adjust and supplement standards and technical regulations, and risk levels in accordance with natural disaster characteristics, contexts of each region and part.

- Ministries, sectors and localities promote the installation of rain gauge and water level monitoring stations, reservoir surveillance cameras, crucial dikes, high-risk areas for

landslides, and tracking equipment for vessel.

Mobilize resources and efficiently use for DRM

- Mobilize fundings and efficiently use according to decentralization and legal authority. Allocate budget for the medium-term public investment plan for the period 2021-2025 and annual budget contingencies to proactively prevent, respond and recovery consequences of natural disasters, especially critical disasters such as strong storms, big floods, flash floods, landslides, droughts, saltwater intrusion. Combining the effective use of domestic and ODA resources to implement strategies, master plans, plans, master programs, projects on natural disaster prevention, response and recovery that have been or are being approved by competent authorities

- Priority allocating budgets to focus on completely handling urgent works to recovery consequences of natural disasters by 2020 for especially in the central provinces; 230 crucial dyke areas, 200 critical reservoirs, high-risk river and coastal erosion areas, and high risk of flash floods and landslides areas as well. Expeditiously complete the investment preparation stage for the development of the Disaster Operation Center in the 4th quarter of 2021.

- To concentrate investment resources, upgrade material foundations and equipment of advisory agencies to serve the direction and administration of disaster response at all levels, especially steering agencies at national and regional levels in a modern manner direction on a par with other countries in the region

- To continue implementing the support program to poor households to build houses to prevent floods and storms for 14 Central region provinces; building and transferring housing models of people in flooding areas, prone-areas to landslide, public works (cultural houses, schools, ...) in combination with storm and flood shelter; Approval decision of the task of planning the system of fishing ports, storm shelter anchorage for fishing vessels in the period 2021 – 2030 with a vision to 2050 (currently the number of boats anchorage port and storm shelter can only meet about 48% needs).

Review and arrange priority order, step by step construction investment, enhance disaster resilience of the infrastructure system

Enhance the role and capacity of state management on DRM

- To consolidate the state management organization system on the basis of centralization and unification direction, clearly defining functions and tasks, resolving the dispersal and overlapping situation. Raise the operational level of natural disaster prevention and control agencies at all levels towards full time, on the basis of reorganizing the existing organizations, building professional, capable, qualified and skilled staff to meet the requirements in the new context. Focusing on consolidating and enhancing the quality and efficiency of the operations of the rescue and rescue forces at the central level

and the shock force for natural disaster prevention and control at the grassroots level.

- Promote the core role of existing forces operating at all levels to reinforce, consolidate and supplement essential resources and equipment. Gradually improve capacities, skills and conditions to ensure timely implementation and flexible handling of natural disaster situations under the motto "four on-the-spot" in accordance with the fields of ministries, sectors and regions, parts, and locality

- Ministries, sectors and People's Committees at all levels are responsible for ensuring resources and operating conditions for agencies and forces involved in the prevention, response and recovery of consequences of natural disasters at the same level especially the shock force.

- Strictly control the investment in the construction of infrastructure for socio-economic development associated with climate change response and natural disaster prevention such as mountainous traffic construction, reservoir construction, hydropower, especially small hydroelectric projects

Promote science and technology and international cooperation on disaster risk management

- To identify scientific and technological development as a key task and effective solution in the prevention, response and recovery of consequences of natural disasters. Priority is given to research, production, technology for monitoring, directing, managing and responding to natural disasters. Especially for major natural disasters occurring on a large area such as storms, floods, flash floods, landslides, droughts, salt water intrusion.

- Focus on application of remote sensing technology, information technology, automation, new materials in database management, exploitation and operation, and tools to support direction and administration. Continue to encourage businesses and research agencies to invest in science and technology, and public - private partnerships

- Building tools to support real-time operation and management; regularly update the database system on natural disaster prevention, infrastructure, livelihood, economy and society, especially in areas frequently affected by natural disasters.

- Promote cooperation, exchange, and sharing of information and experiences, especially with upstream countries of the Red River, the Mekong River and countries in the Asia region. Coordinate with international organizations in completing legal frameworks and developing a disaster risk database. Improve efficiency of international assistance, effectively implement international commitments on natural disaster risk prevention, response and mitigation in which Vietnam participates.