

A Research on Vietnam's Disaster Risk Reduction with a Focus on the Progress of Related National Politics and Sendai Framework Priority Actions

Toshiyuki MOCHIZUKI,* Yasuhiro KASUYA,† Nguyen Thi Thu Le,‡
Haruna ISHIKAWA,§ and Keisuke SATO**

Abstract: This paper discusses the revision of the Law on Natural Disaster Prevention and Control in Vietnam (henceforth the Law) and the progress of related national policies in association with the “Sendai Framework for Disaster Risk Reduction 2015-2030” (SFDRR). The revision of the Law took place after the SFDRR, which began in 2015. As evidenced by previous research, many countries are promoting disaster risk reduction with the SFDRR policy in mind. As natural disasters have become more frequent and larger in scope than before, an important method of escape and other actions focusing on reducing the loss of lives and livelihoods in the Hyogo framework era are not enough to deal with new disasters. The research question in this study is, “Can Vietnam’s revised Law foster the implementation of SFDRR priorities?” To clarify this, we will test the hypothesis that “The content of Vietnam’s disaster risk reduction capacity enhancement supports the implementation of the Priority Actions of the SFDRR.” This study conducted interviews with people involved in disaster prevention in Vietnam to confirm consistency with documents. As a result, this research revealed that currently, in Vietnam, the human resources and budget allocated to response measures and pre-disaster investment are still insufficient. Therefore, it is desirable to enhance strategies and plans, standards and criteria, and laws regarding pre-disaster investment for more comprehensive improvement in disaster risk reduction capacity.

Keywords: *Vietnam, Law on Natural Disaster Prevention and Control, Disaster and Climate Change Risk Management, SFDRR*

1. Introduction

(1) Differences between the Sendai Framework and Hyogo Framework and the Subject of this Research

A disaster risk reduction framework is a document that shows the matters and goals that national governments, local governments, private companies, individuals, etc., around the world

* Faculty of Japanese Studies, Ho Chi Minh University of Social Sciences and Humanities, Vietnam

† College of Science and Engineering, Ritsumeikan University and Advantech Co., Ltd.

‡ Advantech Co., Ltd.

§ Advantech Co., Ltd.

** College of Science and Engineering, Ritsumeikan University

Email: * mochizuki@hcmussh.edu.vn

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should work on to strengthen disaster risk reduction measures. The current global disaster risk reduction framework is the “Sendai Framework for Disaster Risk Reduction 2015–2030” (SFDRR). This was adopted at the 3rd UN World Conference on Disaster Risk Reduction held in Sendai City, Japan, in March 2015 after the Great East Japan Earthquake. In 2011, a massive earthquake and tsunami struck the eastern part of the Japanese coast, including Sendai city. The disaster claimed over 15,000 lives and caused widespread destruction, prompting the international community to prioritize disaster risk reduction (UNU Institute for Environment and Human Security 2023). In this framework, 7 global targets and 4 priorities for action are set as follows:

Priority 1: Understand disaster risks.

Priority 2: Strengthen disaster risk governance to manage disaster risks.

Priority 3: Invest in disaster risk reduction for resilience.

Priority 4: Enhance disaster preparedness for effective responses and “Build Back Better.” in recovery, rehabilitation, and reconstruction.

Busayo et al. (2015) reported that the adoption of the SFDRR by UN member states has led to a pronounced rise in the perceived importance of the framework, consequently fueling substantial growth in relevant academic research in recent years.

The following issues were discussed at the 3rd UN World Conference on Disaster Risk Reduction. The first issue was the importance of a broader, human-centered, preventative approach; in which the cost-benefits of disaster risk reduction were discussed. There was also a discussion on the mainstreaming of disaster risk reduction. This introduced a disaster risk reduction perspective to development in each policy and economic sector. Additionally, the idea of Business Continuity was added to maintain economic activities, along with multi-stakeholder participation. This has contributed to strengthening the disaster risk reduction system and maintaining economic activities.

The Hyogo Framework for Action (HFA), which was used prior to the SFDRR, emphasized escape from disasters to reduce loss of life. The HFA was created in response to the Great Hanshin-Awaji Earthquake in 1995. This disaster claimed the lives of over 6,000 people and caused extensive damage, mainly in Hyogo Prefecture. With such a background, the World Conference on Disaster Reduction was held from January 18 to 22, 2005, in Kobe, Hyogo, Japan (UNISDR 2005). The Hyogo Framework for Action (2005) focused primarily on reducing human casualties. As noted by Munere et al. (2018), the HFA mainly focused on disaster losses, thus seeking to minimize the impacts of disasters.

On the other hand, the Sendai Framework for Disaster Risk Reduction (2015) also adds a developmental perspective of maintaining economic activities. The SFDRR includes not only disaster management but also other policy areas for consideration. For example, according to Nicolas Faivre et al. (2018), the strong link between disaster risk reduction and the environment is well known. This linkage is further strengthened by the increasing impact of climate change on disasters. Furthermore, the SFDRR adds perspectives such as scientific data collection, disaster risk governance, and pre-disaster investment in disaster risk reduction. In addition, in this paper, “scientific” data includes geographical conditions, meteorological conditions, and the socioeconomic environment. Floods are among the disasters targeted by the SFDRR. This paper gives an insight into the Law on Natural Disaster Prevention and Control in Vietnam (hereinafter called the Law) (Hanoi 2013) and the revised one (Hanoi 2020). Among developing countries, there are two reasons why this paper selected Vietnam as its research target.

The first reason is that Vietnam is vulnerable to climate change. About 40% of the total population of Vietnam lives on land below 5 m above sea level (Dasgupta et al. 2007) and has been

identified as being susceptible to climate change (Dasgupta et al. 2007). In a study by Kreft Sonke et al. (2015), Vietnam was ranked the 8th most affected country in the world between 1996 and 2005.

The second reason is that the Law was revised in 2020 and enforced in 2021 under the above-mentioned circumstances. Some of the revisions reflect SFDRR priorities. The primary responsibility has been concentrated on the governments of each country. So far, Vietnam's disaster prevention approach has closely adhered to the "Four On-the-Spot" motto, which comprises (1) Leadership on-the-spot, (2) Human resources on-the-spot, (3) Means on-the-spot, and (4) Logistics on-the-spot. This approach has proven effective when applied to levee management and flood and storm control activities in disaster-affected provinces (CARE 2010). The Four On-the-Spot motto is based on the idea that every location must be self-sufficient in disaster preparedness. This notion is generally used for natural disaster management. Each household or locality should prepare all essential items to prevent or respond to natural disasters that may occur in the locality at any time. CARE International in Vietnam, one of the NGOs (2010), reported that the prepared items should meet the emergency relief demands of the household or its locality and ensure they are ready to support other households or other localities before external forces are asked to provide support. This idea is reflected in the Law. The national and local governments will be responsible for taking appropriate measures, and only the residual risk will fall on the regional government and the people. A paper about the Four On-the-Spot motto in Vietnam by Huy Nguyen et al. (2013) revealed its importance in promoting community-based disaster risk reduction and post-disaster response measures in Vietnam.

On the other hand, in this paper, we focus on the revision of the Law together with the progress of related national policies and discuss the relationship with the SFDRR with a particular focus on pre-disaster investment, including infrastructure construction, the background to the introduction of the SFDRR, the current situation and other issues.

(2) Review of Previous Research

According to Nicodemus and Dennis (2021), many African countries have implemented legislation and disaster risk reduction strategies based on SFDRR Target E, but their content is inadequate. In the introduction of the SFDRR in African countries, lack of the means was the biggest issue, and other issues, such as weak governance and lack of knowledge of DRR among stakeholders, were pointed out. The significance of this previous study is that it gives an overview of the progress of SFDRR Target E for all African countries. In contrast, this paper focuses on one country in a more detailed examination.

Besides Vietnam, there are several studies that focus on the disaster reduction policy of one country and assess its alignment with the SFDRR. For example, Sri Lanka and Poland have been the subjects of research. In addition, according to Henry Ngenyam Bang et al. (2019), the Cameroonian government aims to use the SFDRR's Priorities for Action as a benchmark when evaluating its disaster management policies. A study by Atta, Rajib, and Kamran (2017) also focuses on Pakistan's science and technology administration, discussing climate change, disaster risk reduction, and institutional design based on the SFDRR. Many Asian countries, including Vietnam and Pakistan, belong to such storm and flood-damage-prone areas. This study states the importance of utilizing science and technology as a pillar of development strategy in Pakistan to implement disaster risk management. In addition, Atta, Rajib, and Kamran (2017) evaluated the contents of the disaster risk reduction strategy formulated mainly by the Science and Technology Agency of Pakistan, considering 4 priorities for action, and contributed to understanding the effectiveness of the strategy formulation.

A study that evaluated disaster reduction policies using the Four Priorities for Action as a benchmark for practical application purposes is Musabber Ali Chisty et al. (2022), which dealt with Bangladesh. Similarly, Cameroon aims to use it as an evaluation criterion for its related policies. Thus, this paper follows Atta, Rajib, and Kamran's (2017) evaluation, considers the four priorities for action, and discusses the perspectives of the revised Law in relation to SFDRR.

The importance of the SFDRR's Four Priorities for Action is also discussed in Suriyanto et al. (2019). Also, studies focusing on each of the Four Priorities for Action include Atta-ur Rahman and Chen Fang (2019) (Action 1), Djalante and Lassa (2019) (Action 2) and Kawasaki and Rhyner (2018) (Action 3). Focusing on Priority Action 1, Atta-ur Rahman and Chen Fang (2019) concludes that disaster risk management policies and practices must be based on understanding all dimensions of disaster risk, including vulnerability, coping capacity, exposure, the nature of hazards, and environmental settings. Djalante and Lassa (2019) critically analyzes the progress, challenges, and strategies for strengthening disaster risk governance, corresponding to Priority Action 2. According to this paper, progress has been made in planning and implementing the strengthening of disaster risk governance at the international, regional, and national levels. It also states that more resources, data, and decision-making capacity are necessary. Regarding Priority Action 3, according to Kawasaki and Rhyner (2018), in many countries, the disaster prevention budget has so far been used mainly for emergency response after a disaster and for recovery and reconstruction. There is also a discussion on the actions science, technology, and education sectors should take to increase proactive investment in disaster prevention.

Next, we will review previous studies on policies targeting Vietnam. There are two approaches to flood control: climate change mitigation and adaptation measures. There is a study by Ichihara (2019) in the field of mitigation measures. According to Ichihara (2019), for climate change mitigation measures to be effectively implemented, it is important to establish an implementation system and environment, such as the appropriate design and enforcement of related domestic policies. The significance of the paper (Ichihara 2019) is that it discusses Vietnam's disaster risk mitigation measures from the perspective of how they are supported by legislation. On the other hand, this paper focuses on the introduction of climate change adaptation measures and discusses disaster risk reduction policies for storm and flood damage in more detail.

(3) Significance of this Research

This paper clarifies the policy and implementation issues for the implementation of SFDRR by grasping the actual situation of national policies, including the revised Law in Vietnam, and examining the background of the introduction of the SFDRR.

Previous studies have discussed SFDRR strategies in Vietnam, the introduction of science and technology, and the nation's climate change mitigation measures. However, individuals have focused on research on the relationship between Vietnam's disaster risk reduction law and the introduction of the SFDRR, which has rarely been studied directly. Clarifying Vietnam's efforts regarding the introduction of the SFDRR is significant in that it will contribute to identifying issues and examining improvement measures in planning and implementing disaster risk reduction related to SFDRR in the future.

In Vietnam, the Law has been revised to reflect the contents of the SFDRR. By organizing the revision process of the Law, it can be used as a reference when working on the advancement of disaster risk reduction. In the next section, this paper will give an overview of basic information on Vietnam's natural disaster situation and administrative structure and then refer to the revised Law for 2020.

2. Basic Information about Vietnam

(1) Natural Disaster Situation in Vietnam

Vietnam has a length of about 1,650km from the north end to the south end, and the elevation varies greatly from sea level along the coast to about 500 to 1,000m in the central plateau area and up to 1,000 to 2,000m in the northern mountainous region. There is a rainy season from May to October and a dry season from November to April. Floods and storms account for about half of all-natural disasters in Vietnam. In addition, the number of dead and missing people due to floods and storms accounts for 77% of all recorded victims of natural disasters in Vietnam from 2007 to 2017, and the amount of disaster damage accounts for 91%. Although floods and storms are the main disasters in Vietnam, some damage is caused by droughts and landslides (Figure 1) (JICA 2018). Further, the damage caused by disasters every year is said to cost 1 to 1.5% of GDP (Hanoi 2018).

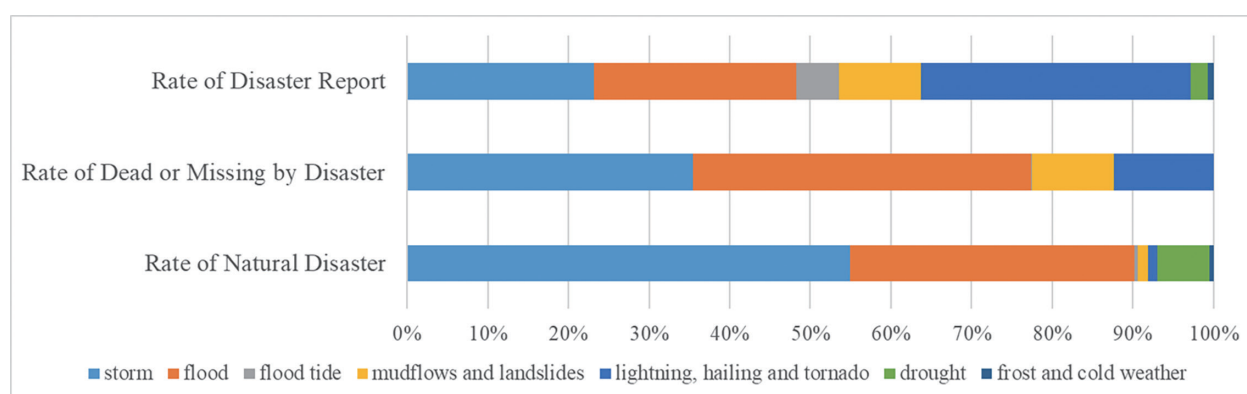


Figure 1. Percentage of disasters in Vietnam

Source: Japan International Cooperation Agency (2018)

(2) Administrative Organizations Related to Disaster Risk Reduction in Vietnam

As of 2020, Vietnam has 58 local provinces and 5 municipalities (Hanoi, Ho Chi Minh, Hai Phong, Da Nang, and Can Tho). Figure 2 shows that the regional administrative organization in Vietnam has a three-layer structure consisting of the province, district, and commune levels. Municipalities and Provinces fall under the government level. Provinces include municipal cities, urban districts, district-level towns, districts, and provincial cities. Commune levels include wards, communes, and villages.

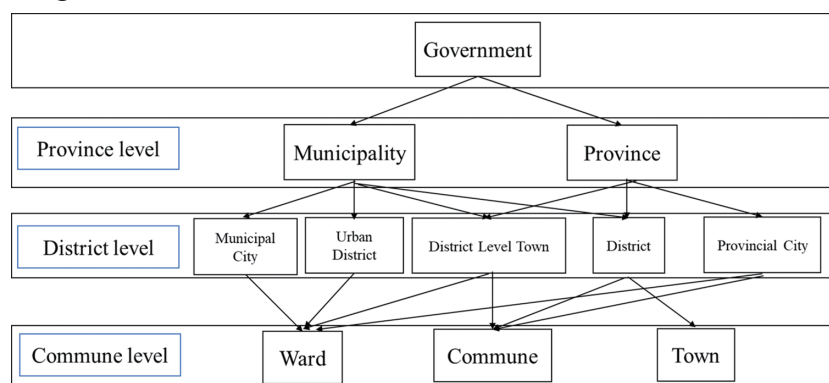


Figure 2. Vietnam's Administrative System

Source: Council of Local Authorities for International Relations (2018)

The Ministry of Agriculture and Rural Development (MARD) is the primary ministry in charge of disaster risk reduction in Vietnam. In Vietnam, where storms and floods are the main disasters, the construction of agriculture-related embankments for irrigation and flood management is the starting point of disaster risk reduction measures.

The functions and roles of MARD in the field of disaster risk reduction are decided under the Law and Decree No. 66/2014 on “Detailed Regulations for Implementing the Law on Natural Disaster Prevention and Control” (Decree No. 66/2014), under the guidance and management of the Central Steering Committee for Natural Disaster Prevention and Control (hereinafter called CSCNDPC), which is the highest directing and commanding organization for natural disaster risk reduction in Vietnam. Vietnam Disaster Management Authority (VNDMA), where the standing office of CSCNDPC is located, and other member organizations of CSCNDPC oversee disaster risk reduction in general in Vietnam. Prior to the enactment of the Law (2013), the “Department for Dike Management, Flood and Storm Control” within the Directorate of Water Resources was mostly responsible for this function. With the enactment of the Law, the “Disaster Prevention Department” was established within the Directorate. VNDMA has approximately 200 staff members. In August 2017, VNDMA was established independently of the former Directorate of Water Resources by integrating the related departments of the former Directorate of Water Resources (JICA 2018).

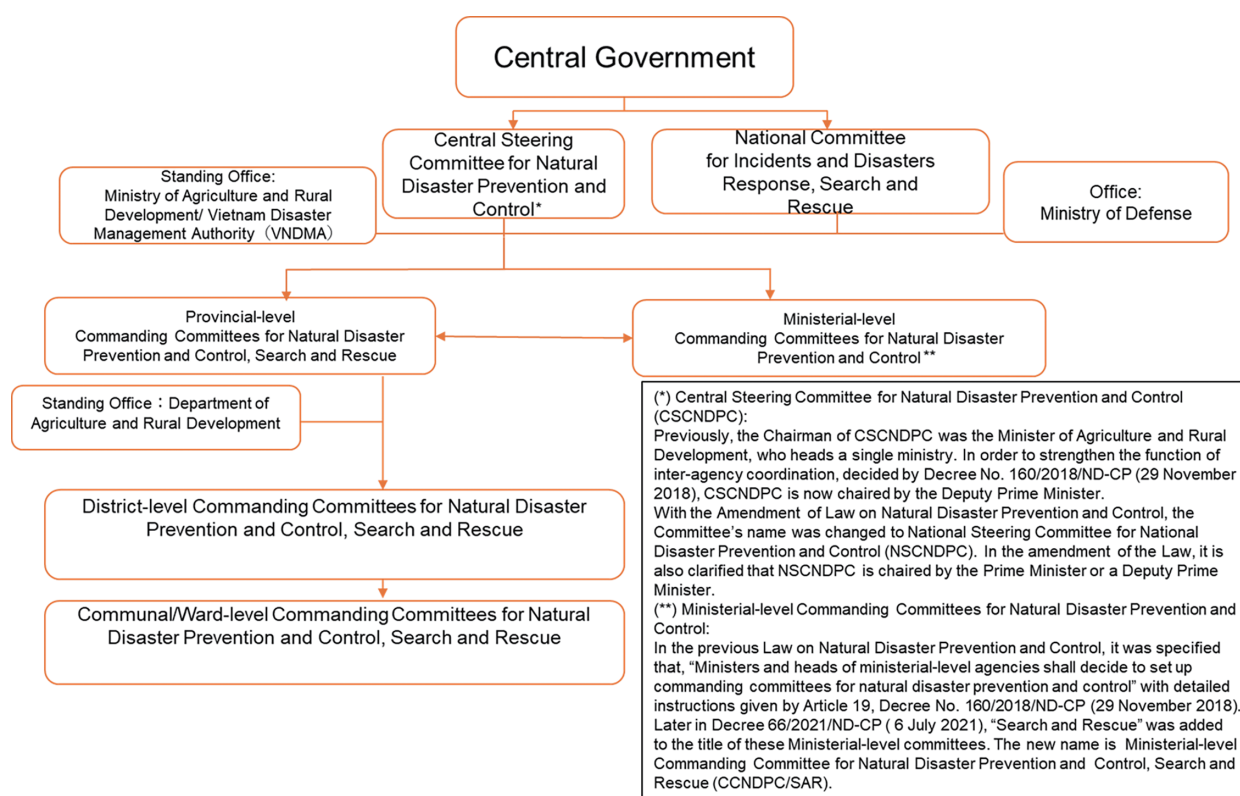


Figure 3. Organization Chart of Disaster Risk Reduction

Source: Translated into English by the authors Tachi, Kenichiro and Yusuke Sakai (2019)

(3) Amendment of Law on Natural Disaster Prevention and Control in Vietnam

Vietnam's disaster risk reduction system is stipulated as the “Law on Natural Disaster Prevention and Control.” Initially, the Law was approved in June 2013 and came into force in May 2014. Based on this law, national disaster risk reduction strategies, disaster risk reduction strategies at the level of each local ministry, and disaster response plans were formulated (JICA 2018).

In addition, Article¹ 4 of the Law before the revision lays out the basic policy for natural disaster risk reduction (Hanoi 2013). In Vietnam, with the motto “Four On-the-Spot” (mentioned in 1-(1)), the onsite-first principle is the basic principle of disaster risk reduction activities (JICA 2018).

The Law was revised in 2020 and enforced in 2021. The revised part will be described later. In this paper, we focus on the fact that among the Four Priority Actions of SFDRR, the three following points are mainly reflected in the revision of the Law: (a) understanding scientific disaster risks, which corresponds to Priority Action 1; (b) formulating disaster risk reduction, which corresponds to Priority Action 2; and (c) strengthening proactive measures, which corresponds to Priority Action 3.

Regarding Priority Action 4, as an effort to enhance preparedness for effective response and to “build back better,” the revision of the Law and support from international societies is officially specified as a resource for this purpose. However, since there have been no major disasters in Vietnam since 2020, when the Law was revised, Priority Action 4 is not subject to discussion in this paper.

(4) Research Questions and Hypotheses

The research question in this study is “Can Vietnam’s revised Law on Natural Disaster Prevention and Control foster the implementation of SFDRR priorities?” To clarify this, we will test the hypothesis that “the content of Vietnam’s disaster risk reduction capacity enhancement supports the implementation of the Priority Actions of the SFDRR.” The reason for setting the above hypothesis is that the revision of Vietnam’s Law on Natural Disaster Prevention and Control took place after the SFDRR, which began in 2015. From previous research, many countries are promoting disaster risk reduction with the SFDRR policy in mind. As natural disasters have become more frequent and more prominent in scope than before, an important method of escape and other actions focusing on reducing the loss of lives and livelihoods in the Hyogo framework era is not enough to deal with new disasters.

(5) Hypothesis Verification Method

The hypothesis is tested by the following method. First, we will summarize the contents of the revised Law and the corresponding items of SFDRR’s Priority Actions from legal documents and related literature on Vietnam’s Law on Natural Disaster Prevention and Control. Next, to investigate the relevant part in detail, an interview survey will be conducted with the parties concerned. The hypothesis will be tested based on the interview survey results. Lastly, the consistency will be confirmed by using the previous research and related materials, and future research issues will be considered. This paper follows Atta, Rajib, and Kamran’s (2017) evaluation, considers the priorities for action, and discusses the perspectives of the revised Law in relation to the SFDRR. (mentioned in 1–(2)).

3. Outline of Revisions to the Law on Natural Disaster Prevention and Control and Interview Survey

(1) Outline of Revisions to the Law on Natural Disaster Prevention and Control

¹ In this paper, “Article” refers to the provision of official documents in Vietnam, and “Article” is positioned in the structure above “Clause.”

The revised items of the Law are as follows considering the priorities of SFDRR.

SFDRR Priority Action 1: understanding disaster risk
<ul style="list-style-type: none"> • Strong winds and fog from sea areas are newly added to the definitions of types of natural disasters in Article 3, Clause 1. • Measures against salt damage, flash floods, and lightning are also added to the types of Natural disaster prevention and control works in Article 3, Clause 5. (1.1.)
<ul style="list-style-type: none"> • The priority of allocation of resources for researches, conducting baseline surveys, science and technology development, and priority of human resource development for natural disaster prevention and control as a national policy of Article 5 was newly added. (1.2.)
<ul style="list-style-type: none"> • Article 13a. on Baseline surveys of natural disaster prevention and control was newly added. (1.4.)
<ul style="list-style-type: none"> • Article 39a. on Science and technology in natural disaster prevention and control was newly added (1.11)
SFDRR Priority Action 2: strengthening disaster risk governance to manage disaster risk
<ul style="list-style-type: none"> • Central Natural Disaster Prevention and Control Fund, in addition to provincial level ones, is positioned in the Natural disaster prevention and control funds in Article 10 (Clause 1) and the purpose of use is clarified (Clause 4). (1.3.)
<ul style="list-style-type: none"> • In Article 15, the content of disaster prevention plans was added, in which both Central level and provincial level governments need to put a focus on formulating an integrated flood management plan in river basins; and plans on the prevention and control of devastating storms, flash floods, landslides, drought, seawater intrusion, or river bank erosion due to flood or strong water current, and coastal erosion”. The Article also stipulates that disaster prevention plans should be prepared with contents and measures suitable to specific types of natural disaster risk levels and specific types of natural disasters (Clause 4 and Clause 6). • The responsibility of the Ministry of Agriculture and Rural Development on guiding the formulation of local natural disaster prevention and control plans at all levels was added (Clause 7). (1.5.)
<ul style="list-style-type: none"> • It is added in Article 44 (Clause 1) that the National Steering Committee for Natural Disaster Prevention and Control is composed of its head, being the Prime Minister or a Deputy Prime Minister, the Committee’s members including ministers, heads of ministerial-level agencies or representatives of leaderships of a number of ministries and related agencies, who work on a part-time basis.
SFDRR Priority Action 3: investing in disaster risk reduction for resilience
<ul style="list-style-type: none"> • Not specifically mentioned
SFDRR Priority Action 4: enhancing disaster preparedness for effective response, and to “build back better” in recovery, rehabilitation and reconstruction
<ul style="list-style-type: none"> • In Article 32 (1.9), international aid was added to resources for emergency relief and mid-term and long-term support.
<ul style="list-style-type: none"> • In Article 33 (Clause 2, dd), it is additionally clarified that “The National Steering Committee for Natural Disaster Prevention and Control shall call for and receive international aid in emergency circumstances caused by natural disasters and transfer them to provincial-level People ‘s Committees for allocation”. (1.10.)

Table 1. Revised Contents of the Law on Natural Prevention and Control and the Priority Actions of the SFDRR

Source: Created by the author based on Resolution on Natural Disaster Prevention and Control (Hanoi, 2018)

From the above, some of the revised Law items reflect the Priority Actions of the SFDRR.

(2) Outline of the Interview Survey

With the aim of clarifying details such as the background and purpose of the revision of the Law and the extent of the impact of the SFDRR, interviews were conducted on February 24 and 26, 2020, and April 22, 2022, either face-to-face in Hanoi or online.

The subjects of the interviews include three people: one of the executives of VNDMA (age: 40s) (hereinafter called one of the executives), a former management-level MARD staff and current individual expert (age: 50s) (hereinafter referred to as the former MARD staff), and an expert on disaster risk reduction, hydraulic and water resource engineering expert in private sector in Japan (age: 50s) (hereinafter called the DRR Expert). All of the three interviewees have over 20 years of experience and extensive expertise in this field. In the interview survey, (a) question items were created, (b) interview forms were sent in advance, (c) interview surveys were conducted, (d) survey results were organized, and (e) additional information was collected by e-mail. The questions set in advance were concerning the following four items.

- i. Background of the story of the revision of the Law on Natural Disaster Prevention and Control
- ii. Understanding risk by scientific method (Priority Action 1)
- iii. Disaster risk reduction plan formulation and governance (Priority Action 2)
- iv. Pre-disaster investment (Priority Action 3)

The survey results are described in Section 4. After that, Section 5 will discuss the issues raised in Section 4, leading to a summary of findings and issues that need to be further considered in the future in Section 6. In addition, this paper focuses on Priority Actions 1, 2, and 3. The reason for this is the difference between the Hyogo Framework for Action and the Sendai Framework for Disaster Risk Reduction, which emphasizes not only human life but also economic aspects, as well as scientific risk assessment, governance, and the pre-disaster investment that accompanies them. In addition, Priority Actions 1 and 2 are necessary to implement Priority Action 3. This paper investigated the actual situation of strengthening these policies.

Also, according to Kawasaki and Rhyner (2018), Priority Action 3 is not independent but closely related to Priority Actions 1 and 2. Therefore, this paper focuses on Priority Actions 1, 2 and 3.

4. Interview Survey Results

(1) Background of the Story of the Revision of the Law on Natural Disaster Prevention and Control

1) When the need to revise the Law on Natural Disaster Prevention and Control emerged

- The Former MARD staff member

Under the former Law on Natural Disaster Prevention and Control enacted in 2014, the chairman of the CSCNDPC was the Minister of MARD. In that case, it was not possible to coordinate the ministers and deputy ministers of other ministries, so it was necessary to appoint the chairman of the CSCNDPC as a higher-ranking officer. Under the revised Law, the Prime Minister or the Deputy Prime Minister became the chairman, and it became possible to instruct and coordinate with ministers of other ministries and agencies other than MARD.

In addition, Natural Disaster Prevention and Control Funds (hereinafter referred to as the Provincial-level Funds) had been established at the provincial level but not at the central level. After the revision, the Vietnam Disaster Management Fund (hereinafter referred to as the Central Fund) was established in 2021 and is managed by MARD. The Central Fund was established not only to receive funds, including donations, but also to regulate support resources from provinces with a large surplus of funds for provinces with budget difficulties. Therefore, it has become possible to collect funds, including aid from international organizations, for disaster risk reduction once at the central level and redistribute them to

local provinces.

The addition of the types of natural disasters is also a factor in the discussion of the revision of the Law.

- The DRR Expert

At the end of the basic investigation conducted by JICA (2016), after the national disaster risk reduction had been in the action plan for five years, there was a request from VNDMA that “the head of the disaster risk reduction governance should be the Prime Minister or Deputy Prime Minister instead of the MARD minister.”

When the Law on Natural Disaster Prevention and Control of 2014 was passed, there was a debate about the disaster risk reduction system. At the time of the landslide disaster that occurred in 2017, there were only disaster risk reduction funds at the provincial level. Therefore, the need for a disaster risk reduction fund at the central level has emerged to be able to flexibly allocate budgets even in the central government. By establishing the Central Fund, the budget can be distributed to any local ministry.

2) Changes in natural and social conditions in Vietnam that led to the consideration of revision of the Law on Natural Disaster Prevention and Control

- One of the executives

MARD could not cope with the situation related to recent disasters with only one ministry and agency, and the expertise of other ministries and agencies was required. MARD requires the management and coordination of other ministries and agencies. Specifically, the situations related to the changing disasters in recent years are as follows. (a) The climatic conditions are changing, and the weather cannot be predicted. (b) Since the weather cannot be predicted, risk assessment cannot be performed. (c) New disasters such as debris flow, coastal erosion, and hail have begun to occur. (d) It is not possible to manage those disasters. (e) The infrastructure for responding to disasters is not in place. (f) There is no legislation in place to respond to disasters. (g) Early warning is needed.

Another reason is that dealing with disasters is complicated due to human influences as well as climate change. (h) There has been massive extraction of sand from river basins and dunes for construction material due to economic growth; in fact, coastal erosion has occurred. (i) People are now living in places where people have not lived before. Vietnamese tend to want to live near the river because of the need for agriculture and cooking, but there are some dangerous areas that are not suitable for living. As the number of densely populated areas increases and rapid industrialization continues, proper measures should be taken to improve land use. However, the economy has continued to grow without enough such measures being implemented.

3) To what extent were you aware of the introduction of the SFDRR perspective when revising the Law on Natural Disaster Prevention and Control?

- The Former MARD staff

The Law before the revision was from the time of the Hyogo Framework for Action. Since the definition of risk was included in the Law before the revision, the awareness of risk originally existed.

SFDRR Priority Action 1 is risk understanding, and we decided to include this content in disaster risk reduction at each level. Priority Action 2 is governance for disaster risk reduction. Under the revised Law, CSCNDPC was renamed the National Steering

Committee for Natural Disaster Prevention and Control (hereinafter called NSCNDPC), with its head being the Prime Minister or a Deputy Prime Minister. There are also natural disaster preparedness and search and rescue commanding committees at each level, with the head being the chairman of the People's Committees. As shown by the above evidence, it has become possible to obtain budgets for local disaster management plans, and the central government is able to provide guidance to local governments. From that, disaster risk reduction governance has been strengthened.

In Vietnam, disaster risk reduction has been strengthened at the central level, but there is still a problem in that there are no staff specializing in disaster risk reduction at the county level and local level, which are often first to respond to the disaster. This is one of the weaknesses of the current disaster risk reduction system in Vietnam. Priority Action 3, efforts for investment, that is described in Decision 48.

- The DRR Expert

In Vietnam, flood, hydraulic control, and storm countermeasures have advanced little compared to other Asian countries, so VNDMA is conscious of the introduction of the SFDRR. However, is the revised Law based on the circumstances peculiar to Vietnam?

(2) Understanding Disaster Risk (Priority Action 1)

1) Background of increasing designated disaster types

- The Former MARD staff member

Because a new disaster emerged that had never existed before, the revised Law added forest fires and super typhoons as disaster types. In fact, such typhoons approach Vietnam nowadays.

2) Background of positioning research themes related to natural disasters conducted at MARD and universities under the Law on Natural Disaster Prevention and Control

- The Former MARD staff

In addition to the existing fields such as hydraulics and water resources, sociology and IT fields are now connected to disaster risk reduction. Thus, it is necessary to have the budget distributed based on disaster risk reduction. If the revised Law clearly states the research theme of disaster risk reduction and a budget for disaster risk reduction has been obtained, this will lead to the financing of related surveys and investigations for disaster. Therefore, it will become easier to promote the advancement of science and technology in disaster risk reduction.

3) How much has the budget for science and technology related to disaster risk reduction increased compared to before the revision of the Law on Natural Disaster Prevention and Control?

- The Former MARD staff

The local ministry's budget for hiring specialists for planning and investment efforts is described in Decision 48. In addition, a new budget has been obtained because there are talks about raising funds (15 million VND to 20 million VND) to make households safe in the central region. The research budget for the erosion and sediment control (Sabo) project in the north has already been obtained.

(3) Strengthening Disaster Risk Governance to Manage Disaster Risk (Priority Action 2)

1) Background other than SFDRR, which positioned planning as the revised Law on Natural Disaster Prevention and Control

- The Former MARD staff

The disaster risk reduction plan itself existed before the revision of the Law. There is a disaster risk reduction plan at the central level, but plans at the local level are even more important. This is because understanding specific risks and activities is critical. In the revised Law, the talk of precautionary measures was included in the disaster risk reduction plan. In addition, when a disaster risk reduction plan is made, it is made in line with the socioeconomic development plan. Each local province is obliged to prepare a socioeconomic development plan on a five-year basis. When making any pre-disaster investment or measure, it is more likely to be approved if it utilizes a socioeconomic development planning framework. Currently, this former MARD employee is supporting the development of disaster risk reduction plans in Quang Ngai Province. Each province prepares the necessary disaster risk reduction plan, but the center instructs them to make the plan, and the revised Law is the basis of the instruction. A new job, such as a consultant, is created when the province formulates a disaster risk reduction plan.

In addition, Vietnam itself formulates a national strategy on a 10-year basis [the Socioeconomic Development Strategy (2021–2030)] and a mid-term Socioeconomic Development Plan (2021–2025). A new disaster risk reduction plan will be formulated in accordance with the above development plans. Furthermore, investment in infrastructure and structural measures cannot be made unless it is included in the medium-term public investment plan (2021–2025). In addition, those who do not comply with the Planning Law formulated in 2017 cannot obtain a budget. It is not possible to include the implementation of disaster risk reduction measures in the local provincial disaster risk reduction plan without having it stated in the provincial integrated master plan in the first place.

- The DRR Expert

Even in the Law before the revision, there were sentences on planning, but “guidance” was not included. However, the following sentence was added to the revised Law. “MARD shall take charge and cooperate with the Ministry of National Defense, Ministries, ministerial agencies, Governmental agencies, and local authorities in formulating a national natural disaster management plan to be submitted to the Prime Minister for approval; provide ‘guidance on the formulation of local natural disaster management plans to local authorities.’”

Article 15 is the topic of the entire disaster risk reduction plan (Hanoi 2020). Drawing from the study by Tachi and Sakai (2019) among them, each local level is added in Article 15-2, the group level is added in Article 15-3, and “15-4 Province level, and 15-6 National level” are added to the Integrated Flood Management Plan (IFMP).

This content originates from the story of Vietnam’s planned economy and has come down to the local level. On the other hand, since the document of Vietnam’s disaster risk reduction strategy reflects the items of SFDRR, both the SFDRR and the domestic situation in Vietnam have influenced the revision of the Law.

2) The introduction of the integrated flood management plan was unique to Thua Thien Hue and Quang Binh provinces, but why was it reflected in the Law on Natural Disaster Prevention and Control?

- The Former MARD staff

It was important that IFMP (Integrated Flood Management Plan) was adopted in the revision of the Law. It became necessary to reflect the items of IFMP in the revised Law, and various actors came to think that they had to take control of disaster risk reduction themselves, and it became easier to get a budget for implementing disaster risk reduction-related policies. The introduction of IFMP has also made it easier to budget for flood control across basins. The Department of Agriculture and Rural Development (hereinafter called DARD) of local provinces wants to gather other departments, such as the Department of Natural Resources and Environment (hereinafter called DONRE) and the Department of Construction (hereinafter called DoC) of local provinces, at disaster risk reduction meetings to solve disaster risk reduction that spans multiple ministries.

For example, it is difficult to attract investment if a region is submerged in floods once every three years. It is difficult for the Ministry of Industry and Trade alone to solve such problems if it is necessary to attract industrial companies and increase economic growth. In such a situation, if the cooperation between ministries and agencies is positioned under the revised Law, it will be easier to deal with problems that span multiple watersheds and areas smoothly.

3) Has disaster risk reduction planning been achieved in all communes in 2020? (SFDRR Target E)

- The Former MARD staff

As of 2020, a disaster risk reduction plan is being prepared locally. The commune-level creates a response plan in the event of a disaster, which differs from the disaster risk reduction plans recommended by the SFDRR.

- The DRR Expert

Some local provincial disaster risk reduction plans include resources and lists in response. Since Vietnam's disaster risk reduction plan always formulates a response, there is a plan at the local level as well. The plan existed in Vietnam before the SFDRR, but when it comes to risk management, there is currently no disaster risk reduction plan at the commune level.

4) Background that MARD can comment on when the disaster risk reduction field is involved, even in the work in charge of other ministries.

- The Former MARD staff

When Minister MARD was the chairman of the former CSCNDPC (mentioned in 2–(2)), members from other ministries did not need to comment on disaster-related policies, plans, and measures that MARD oversees.

However, with the Deputy Prime Minister as the head of NSCNDPC (mentioned in 4–(1)). Ministries other than MARD also had to comment. The chairman position of the NSCNDPC became the Deputy Prime Minister at the time of the survey with MARD experts, which has strengthened the sense of responsibility and interest in disaster risk reduction in each ministry and agency.

(4) Investing in Disaster Risk Reduction for Resilience (Priority Action 3)

1) Is there any part of the revised Law on Natural Disaster Prevention and Control that describes pre-disaster investment?

- The Former MARD staff

There is no direct description regarding investment in the revised Law. However, items related to the basis of investment and basic research on science and technology have been expanded. Moreover, the budget for this is secured. Therefore, it can be said that the groundwork for investment has been completed.

- The DRR Expert

Even in Vietnam, hydraulic control measures such as the embankment in Hanoi and the dam in the central part are equivalent to pre-disaster investment. Although there is no clear description in the revised Law, the budget is devoted to risk measures, just as the disaster risk reduction plan has a considerable budget for structural measures. Flood policies are clarified in the plans and policies, such as building a ring levee in some areas of the Mekong Delta region and a dam upstream in the central area. From this, it can be said that Vietnam is conscious of pre-disaster investment.

However, in the current situation in the central region, when disasters happen, there is still more focus on evacuation than risk mitigation. Pre-disaster investment has not been sufficient. In the future, as the economy develops, it will be necessary to take measures other than the methods used so far.

2) Challenges in increasing pre-disaster investment in the future.

- The Former MARD staff

The proposed erosion and sediment control (Sabo) pilot project in the northern region is equivalent to investment. Currently, a survey is being conducted, design standards are being created, and human resource development related to erosion and sediment control (Sabo) is also being carried out (Decision 48) (Tachi and Sakai 2018, Hanoi 2018). The damage in the event of a disaster is expected to be reduced if pre-disaster investment is made. However, it is difficult for each local ministry to invest in large-scale projects above a certain level due to a lack of budget. There is pressure that Vietnam needs to tackle challenges that are more immediate and pressing than disaster risk reduction, such as increasing the energy supply and constructing highways due to Vietnam's rapid economic growth. It is also difficult to evaluate the effect of pre-disaster investment even if the budget can be obtained. Further, it is necessary to evaluate the contents of the disaster risk reduction plan from a scientific point of view and to comply with the law when investing. At that time, the procedures of each law, such as the Construction Law and the Law on the State Budget of Vietnam, were complicated, and the procedure may have been delayed because the frequency of meetings of the People's Committee was low.

- The DRR Expert

It is difficult to discuss how comprehensive pre-disaster investment will proceed. What is clearly lacking is the idea of "how far is the goal to be achieved" and "what is to be done for that purpose." DARD and other organizations only describe the contents of the disaster risk reduction plan for the time being in order to secure the budget, and it is an inconsistent plan taken as a whole. Not only has the central region not been able to make planned

investments with hydraulic control targets, but it has not even shown a roadmap to some extent. On the other hand, in places where there is a large embankment in Hanoi the priorities of plans and projects are clear, and many of them have a sense of purpose and set targets for implementation.

(5) Summary of the Interview Survey

In this research, the interviews were conducted with three people: one of the executives, the former MARD staff, and the DRR Expert. The primary objective of these interviews was to explore the background of the revised Law and to analyze its alignment with the Priority Actions outlined in the SFDRR. By adopting a qualitative interview approach, this research was able to gather detailed answers and insights from participants representing diverse perspectives, including representatives of current and former DRR in-charge officers of MARD, as well as external organizations in the sector. The data collected through these interviews has proved to be both effective and instrumental in supporting the improvement of this research.

5. Hypothesis Testing and Discussion

The hypothesis of this paper was that “the content of Vietnam’s disaster risk reduction capacity enhancement supports the implementation of the Priority Actions of the SFDRR.” This hypothesis will be discussed using interview surveys and literature.

(1) Background of the Revision of the Law on Natural Disaster Prevention and Control

As a result of the interview survey, it was found that there are three main reasons why the necessity to revise the Law has been discussed in Vietnam. These are the improvement of the governance system, the disaster risk reduction fund system, and the change in the types of natural disasters. Hereinafter, they will be described in order.

The first is the governance system. Since disaster risk reduction is a complex policy area, it may be possible to take effective measures if productive coordination between ministries and agencies occurs. However, the fact that the head of the conventional CSCNDPC was the Minister of MARD sometimes hindered coordination with other ministries and agencies. Therefore, in the revised Law, the name of the CSCNDPC was changed to the NSCNDPC, and the chairman position was promoted to Prime Minister or Deputy Prime Minister (Hanoi 2018). This made it possible for ministers of other ministries and agencies other than MARD to give instructions and adjustments regarding disaster risk reduction policies.

The second is about funding for disaster risk reduction. In the past, “natural disaster prevention and control funds” could only be operated at the provincial level, which was inflexible in budget allocation for disasters. On the other hand, in the revised Law, the Vietnam Disaster Management Fund (the Central Fund) was established and is now managed at the central level (Hanoi 2018). As a result of the survey, the operation and management of disaster risk reduction funds and disaster risk insurance have been strengthened more than before. In addition, the issues around accepting foreign aid funds were also improved by revising the Law.

Third, it was necessary to increase the number of designated disaster types due to changes in the natural environment. In addition, the types of disasters that have come to occur in recent years may span the jurisdiction of multiple ministries and agencies, and one ministry and agency with

only MARD may not be able to handle such disasters. It can also be said that this is the factor that led to the improvement of the first governance system.

In addition, the increase in floods is also due to rapid industrialization and agricultural activities without appropriate flood management plans. Tyler et al. (2016) pointed out that these man-made factors have been cited as contributing to the increase in floods in Vietnam. The views of one of the executives are consistent with this previous research.

(2) About the Introduction of SFDRR and the Revision of Law on Natural Disaster Prevention and Control

The content of the revised Law is not entirely consistent with the SFDRR due to Vietnam's specific background. However, the SFDRR is partially considered, and results show that it is approaching the actions prioritized in the SFDRR. In addition, since the 500-year return period of the embankment has been under construction in Hanoi for a long time, it was found that some pre-disaster investment was made before the SFDRR (2022 JICA).

In general, the content of the Law before the revision emphasized response, which was close to HFA. However, after the revision, the response is still prioritized, but precautionary measures, including risk assessment and planning, are becoming more prevalent than before the revision. Below, we will discuss the relationship with each of the Priority Actions in 5.3.-5.5.

(3) Scientific Risk Understanding

One of the current disaster risk reduction issues in Vietnam is the enhancement of investment. However, the basic policy of disaster risk reduction in Vietnam is under the motto of "Four On-the-Spot," which is based on the idea that each location must be self-sufficient in its disaster preparedness. (mentioned in 1-(1)). In other words, first, the government must adopt a method of taking on as much responsibility as possible, such as building levees to protect critical infrastructures (i.e., schools and hospitals) and reducing the residual risk to the ministries, cities, localities, and individuals. As a first step, a risk assessment is performed at each level, and the residual risk is decreased to a lower level. However, MARD has pointed out the problem of the accuracy of the initial risk assessment being poor in the first place.

Therefore, research is necessary as a prerequisite for introducing science and technology. In the past, there was no mechanism called risk assessment itself. However, the revised Law has made it possible to evaluate the impact of floods based on the results of flood calculations. Items related to science and technology research were added to the revised Law, but the background is that it became necessary to secure a budget related to the field of basic disaster risk reduction research. This made it easier to include science and technology items in disaster risk reduction plans. The fact that the research fund for the erosion and sediment control (Sabo) pilot project in the northern region was obtained (Tachi and Sakai 2019) also confirms that the science and technology research is being carried out.

(4) Planning and Governance

The revised Law has been influenced by both the domestic situation in Vietnam and the SFDRR.

The influence of Vietnam's domestic situation is as follows. Vietnam formulates national strategies on a 10-year basis, and disaster risk reduction plans are formulated accordingly. In addition, it is necessary to formulate plans within the scope of various laws in addition to the disaster

risk reduction field. Further, although the Law before the revision did not include an item related to “guidance,” there was an item related to planning. Prior to the SFDRR, it was decided to create national and local ministry plans. With the revision of the Law, the policy, “the central government will guide the formulation of plans to be implemented at the level of each local ministry,” has been added. In addition, the “Integrated Flood Management Plan” and “Flash Flood and Landslide Countermeasures” were added to the documents of Article 15-2 and Article 15-3 (mentioned in Table 1) and support the SFDRR, not only at the national level but also at the local level.

However, the influence of the SFDRR is also evident, and as pointed out by the DRR Expert, the disaster risk reduction strategy-related document itself also contains items related to the SFDRR (mentioned in 4–(3)).

Next, we will discuss Target E. When it comes to planning at the local level, many municipalities in Vietnam developed plans during the past decade, but they did not clearly and sufficiently reflect the SFDRR priorities. Further, some of the commune-level plans differed from the disaster risk reduction plans, which made an action plan in the event of a disaster but were also aware of pre-disaster investment. For these reasons as well, there was little progress on proactive measures.

On the other hand, after the adoption of the SFDRR, there are not many plans, including proactive measures at the local level, but the number of local governments that are formulating plans is increasing. Moreover, it was confirmed through the interview survey that the budget required to develop disaster-related plans is progressively rising. Furthermore, the central government has been able to give guidance to municipalities for the improvement of the disaster risk reduction plan at the local level after the revision of the Law, so it is considered that the quality of disaster risk reduction plans is gradually advancing. Therefore, from the survey results, it can be said that the capacity for governance and planning is being improved.

(5) Pre-disaster Investment

There is no explicit reference to “pre-disaster investment” in the revised Law. However, topics related to planning that are linked to grounds for investment and basic research on science and technology have been expanded in the revised Law. For example, after the revision, statements were added about the collection and analysis of data related to natural disasters, the application of science and advanced technologies to increase the efficiency of investment in and management, and the use of natural disaster prevention and control works. The guidance on the contents of DRR-related plans also became more specific (Hanoi 2020). From this, it can be said that the content regarding investment is more substantial than before. In fact, Vietnam has been doing projects that are equivalent to investment, such as the construction of embankments in Hanoi and dams in the central region. From this, it can be said that a certain amount of the budget has been devoted to risk countermeasures in Vietnam before the SFDRR.

On the other hand, although the concept of investment exists in Vietnam, it is not yet sufficient (Hanoi 2018). Also, it is noted that both the quantity and quality of human resources are lacking in terms of disaster risk reduction notices and that natural disasters are not efficiently integrated into socioeconomic development (Hanoi 2018). For example, the current policy is to allow some inundation in the central region, but if Vietnam plans to attract domestic and foreign investment for projects such as constructing shopping malls and factories in the future, different measures will need to be taken.

It was also pointed out that it is difficult to make financial investments due to the need to comply with various laws and the complicated procedures required. Even if a budget could be

obtained, it is difficult to evaluate the effect of investment from a scientific and economic point of view.

6. Conclusions and Future Challenges

(1) Conclusions

The revision of the Law on Natural Disaster Prevention and Control is based on both the domestic situation in Vietnam and the SFDRR. The conventional disaster risk reduction policy of Vietnam was based on the “Four On-the-Spot” motto. However, in recent years, disasters that cannot be prevented only by the idea of “Four On-the-Spot” have emerged in Vietnam, and it has become necessary to re-examine the contents of the Law.

On the other hand, the documentation of Vietnam’s disaster risk reduction strategy also includes content in line with the SFDRR; therefore, the influence of the international framework can be identified (Hanoi 2021).

In this paper, we discussed the progress of Vietnam’s related national policies, including the revised Law on Natural Disaster Prevention and Control, considering Priority Actions 1, 2, and 3 of the SFDRR, which are scientific risk understanding, planning and governance, and the enhancement of pre-disaster investment.

Regarding the scientific understanding of the risk of Priority Action 1 and the planning and governance of Priority Action 2, it can be said that the contents of the revised Law, which was close to HFA, came closer to the implementation of the Priority Actions of the SFDRR. However, the preliminary measures of some localities were insufficient. In particular, the most significant change in the revised content is that those who emphasized response measures are also conscious of proactive measures.

Since data on disasters is needed to take proactive measures, the importance of understanding risks based on scientific facts has emerged (Priority Action 1). For that purpose, it is necessary to formulate a plan for each local government in advance and for a disaster risk reduction plan at the local ministry level, as well as a plan for proactive measures (Priority Action 2). However, regarding Priority Action 3, concrete pre-disaster investment has not yet progressed sufficiently. Although efforts have been made that are substantially equivalent to investment, the word “investment” could not be confirmed in the revised Law. It can be said that this is one of the issues in Vietnam’s current disaster risk reduction situation.

(2) Challenges in Promoting Vietnam’s Disaster Risk Reduction

The current situation in Vietnam’s disaster risk reduction is that human resources and the budget are devoted to response measures, and pre-disaster investment is still insufficient. Similar situations have been reported in Poland and Cameroon by Goniewicz and Burkle (2019) and Bang et al. (2019), respectively. In fact, all interview respondents pointed out that the current disaster risk reduction measures are biased toward response measures. Kawasaki and Rhyner (2018) also argue that “the budgets for disaster risk reduction are mainly used for post-disaster emergency response, recovery, and reconstruction in many countries.” In the study by Kawasaki and Rhyner (2018), a similar situation was observed in Vietnam.

In the case of the Law before the revision, response measures were relatively sufficient because it was before the period of economic growth had begun, but when it was time to discuss the revision of the Law on Natural Disaster Prevention and Control, there were some new aspects to be observed. In addition, if real estate prices rise or domestic and foreign investment increases,

leading to more industrial complexes and shopping malls with residences, enhanced investment in disaster risk reduction measures would also become more necessary in the future. Also, as noted by Kawasaki and Rhyner (2018), investing in human resources involved in science, technology, and governance is crucial for making more appropriate pre-disaster investments.

It is important to improve the accuracy of scientific data (Tonouchi et al. 2020). This corresponds to Priority Action 1. More proactive pre-disaster investment measures should be taken. For example, landslide prevention measures such as erosion control dams and infrastructure development (Sabo) should be considered (Tachi and Sakai 2019). Flood prevention measures should also be implemented for longer than just a 5- to 10-year probability period. In particular, areas in some regions with tourist destinations downstream should plan for dams and flood control basins upstream.

Additionally, disaster prevention plans and strategies need to be upgraded. The central government should focus on proactive measures rather than merely reactive responses. Scientific data resources should be utilized for social implementation. It is also important to implement socioeconomic development plans that incorporate disaster risk reduction. This aligns with the results of the interview survey in this paper.

As Willemien van Niekerk et al. also point out (2013), it must be emphasized that a discussion on pre-disaster investment is needed. It is desirable to reflect this in strategies and plans, standards and criteria, and laws regarding pre-disaster investments. As for strategy, a FACT SHEET issued by the White House says that in the USA, such programs will allow communities to apply for nearly 5 billion USD to increase their preparedness in advance of climate-related extreme weather events and other disasters and improve their ability to recover after these events. In Japan as well, 5% to 8% of the government budget has long been invested in disaster prevention. Moreover, the Act Strengthening the Philippine Disaster Risk Reduction and Management System states that at least 5% of financial resources must be used for disaster prevention. It is conceivable that making advanced investments will lead to a more comprehensive improvement in disaster risk reduction capacity.

In addition, this paper has focused on Priority Actions 1,2 and 3. Since the law was just revised and enforced in Vietnam in 2021, we would like to conduct research on the effectiveness of Priority Action 4, “Build Back Better,” in the future, such as focusing on disaster recovery aided by the Central Fund founded in 2021 and the aforementioned erosion and sediment control (Sabo) measures.

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