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FUNDS FOR NATURAL DISASTER PREVENTION AND CONTROL IN VIETNAM: A REVIEW

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ABBREVIATIONS

CCDPC	Central Steering Committee for Natural Disaster Prevention and Control
DARD	(Provincial) Department of Agriculture and Rural Development
DPCF	Natural Disaster Prevention and Control Fund
DPCL	Natural Disaster Prevention and Control Law
DRFI	Disaster Risk Financing and Insurance
DRM	Disaster Risk Management
FONDEN	Natural Disaster Fund of Mexico
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GoV	Government of Vietnam
GSO	General Statistics Office
ISA	Insurance Supervisory Authority
MARD	Ministry of Agriculture and Rural Development
MoF	Ministry of Finance
MPI	Ministry of Planning and Investment
PPC	Provincial People's Committee
SBL	State Budget Law
SCDPC	(Provincial) Steering Committee for Disaster Prevention and Control
SECO	Swiss State Secretariat for Economic Affairs
SOE	State-owned Enterprise
UNAM	Universidad Nacional Autónoma de México
VND	Vietnamese Dong

EXECUTIVE SUMMARY

Vietnam faces average (direct) losses estimated at around US$1.4 billion every year due to natural disasters, mainly caused by floods and tropical cyclones. This is equivalent to 0.8 percent of gross domestic product and includes government contingent liability estimated at US$278 million (VND 5.9 trillion) (World Bank 2017).

The Government of Vietnam (GoV) implemented a comprehensive legal framework for financial management of disasters that covers the life cycle of disaster risk management (DRM), including preparedness, risk reduction and prevention, risk financing, and disaster response and recovery. It gives the GoV the lead role in disaster prevention and control, including protecting livelihoods and assets. According to this legal framework, the GoV is primarily responsible for risk mitigation, post-disaster emergency response, social assistance, agriculture support, and public infrastructure recovery.

DRM relies heavily on state budgets at all levels, as other financial instruments are still nascent or not yet fully functional. The GoV has relied heavily on budgetary instruments to finance risk mitigation, emergency response, and reconstruction. Various funding sources are currently available to and used by the GoV for disaster prevention, response, and recovery, including capital budget, contingency budgets at central and local levels, budget (re)allocation, state in-kind reserves, financial reserve funds, Disaster Prevention and Control Funds (DPCFs), risk transfer instruments such as insurance, and donor grants, among others.

DPCFs were established at provincial level and provide an additional source of post-disaster funding to the state budgets, but they face a number of constraints that prevent them from being fully operationalized across provinces. Since Decree 94/2014/ND-CP came into effect in October 2017, 56 DPCFs have been established. Total cumulative contributions were VND 950 billion (US$41.6million), and almost VND 400 billion (US$16.8million)[1] was spent. But a lack of clarity and limited guidance on key points has posed operational constraints; these are listed below in more detail.

This draft report aims to review the current policy, legal, institutional, and operational arrangements that govern the DPCFs in Vietnam as part of the country's overall framework for financial management of natural disasters. The report (i) reviews Vietnam's overall legal and institutional framework for disaster prevention and control and the associated financial instruments, including their performance; (ii) analyzes the legal and institutional arrangements and identifies constraints in the operationalization of the DPCFs; and (iii) sets out options to improve the current arrangements and promote full operation of the DPCFs.

The review of the policy, legal, institutional, and operational frameworks and actual operations of the funds reveals a number of issues, including challenges around the funds' policy mandate, scope

1 Calculation uses a US$/VND exchange rate of 23,800.

of activities, and beneficiary coverage; overlap between the DPCFs and other financing instruments in service delivery; and gaps in how DPCFs are coordinated with and linked to the country's overall disaster risk financing arrangements. In particular, more clarity is required on division of institutional roles and responsibilities, particularly among DRM and financial authorities, and on decision-making process.

Key operational constraints that prevent the DPCFs from being fully operational include the following:

- The governance structure is unclear. The current regulations provide limited guidance on how institutions should be set up at the local level to achieve the funds' mandates and objectives, or on how various local agencies should coordinate. The structuring of the funds only at the provincial level may slow down decisions about funding, which could be particularly problematic when timely funding is critical.
- The lack of a funding strategy and restricted funding model are problematic. The Natural Disaster Prevention and Control Law (DPCL) 2013 does not allow funds from budget transfer, so DPCFs' current funding relies solely on contributions from eligible individuals and entities/firms, with few (if any) voluntary contributions. None of the funds under review has developed a funding strategy that includes management of the fund's liabilities and assets over short-, medium-, and long-term horizons. The funds in effect retain all the risk of financing the cost of disasters, as no risk transfer instruments seem to be allowed under the regulations. These arrangements potentially threaten the financial sustainability of the funds. In addition, by keeping cash in a zero-interest-rate treasury account in anticipation of a disaster, the funds incur significant opportunity costs.
- The funds' financing strategy is informed by only limited risk assessment, due in part to local authorities' limited technical expertise.
- The contribution mechanism is unclear. More specifically, it is not clear what methodology is used to calculate contributions, why levels of contribution differ across sectors, why DPCF contributions are higher than for the former floods and storms prevention funds, or how contributions translate into entitlements. This lack of clarity raises issues of fairness and equity. A related concern is that DPCF managers have limited powers in enforcing contribution collection.
- The current regulations provide limited guidance on eligibility for funding and use of expenditure, triggers for funding, or processes for funds disbursement and execution following disasters. No operational expenses are allowed, a restriction that negatively impacts the operational sustainability of the funds.
- Guidelines on damage and loss assessment are not complete, and how assessments are linked to funding remains unclear. The methodology for calculating financial losses and damage, including the government's share of the losses, is deficient, given that the process is still partially manual and applies little technology.
- There is no guidance on the form in which support should be delivered, who should deliver it, and how this support should link to the existing support delivery system. Currently, post-disaster benefits are generally delivered in the form of cash or in-kind support, and cash-based support is still the preference of both service delivery agencies and beneficiaries.

- Current regulations do not provide detailed guidance on supervisory frameworks, institutional arrangements, and mechanisms for supervision of the funds.
- Guidance is ambiguous on how to select staff for the funds and on how the funds are administrated; this is particularly problematic given that the regulations do not allow for administrative or operational costs, and given the workforce reduction initiative under preparation by the government.

This report presents options to improve the DPCFs for consideration. The first set of options presented deals with the policy, legal, and institutional frameworks, and the second set deals with operational frameworks.

Options to improve policy, legal, and institutional frameworks include the following:

- Better articulate the DPCFs' goals, guiding principles, and role in the country's broader disaster risk financing framework. The GoV could better define and prioritize the beneficiaries and scope of activities eligible for funding from the DPCFs. The DPCFs could be coordinated with other risk financing instruments through the development of financial protection strategies at central and provincial levels, with the DPCFs acting as the first lines of defense before triggering of the state budget and other instruments.
- Improve the institutional frameworks and governance structure for the funds. The GoV could revise the current regulations to clearly delineate responsibilities among stakeholders and ensure a fast and evidence-based decision-making process, efficient and timely execution of resources, inclusion of a wider spectrum of stakeholders (to enable accountability, discipline, and transparency across institutions), and lean operations and cost-efficiency. Toward these ends, the DPCFs could be established at the central and provincial levels to enable on-site, quick response through a process that distinguishes the governing from the execution function. The governing function can be set up in the form of a governing board or council, headed at the provincial level by the PPC chair and at the central level by the prime minister or a delegated person who can coordinate disaster risk financing instruments. At the execution level, DRM authorities could be in charge of technical functions while financial authorities such as the department of finance or ministry of finance could take the lead in making sure the DPCFs are well funded for their liabilities and look after their fiduciary duties.

Options to improve operational frameworks include the following:

- Develop a disaster risk financing strategy for the DPCFs that allows for the use of innovative risk finance instruments. Such a strategy would optimize the use of financial instruments to match the statutory liabilities of the DPCFs and could help the government manage the funds' assets and liabilities. Under current regulations, the funds rely solely on fixed contributions from individuals and businesses and retain all the risks; they could be revised to allow transfer from the state budget as appropriate and use of innovative risk transfer instruments (including insurance) to ensure financial sustainability of the funds in case of extreme events.
- Leverage the expertise and capital of the private insurance sector. The private insurance sector could help the DPCFs access risk management expertise and transfer excess risks to the insurance markets through public-private partnerships.

- Review current contribution mechanisms. The GoV could revisit current levels of contribution by defining and quantifying the liabilities of the DPCFs as part of the government's liabilities. Catastrophe risk modeling may be used to quantify the contingent liabilities. Other parameters such as eligibility and calculation formula could also be revised to improve equity, consistency, and transparency. Alternative channels for contributions, such as the tax or social security authorities, could also be explored.
- Improve resource allocation and execution mechanisms. The GoV could improve the resource allocation process for various activities financed by the DPCFs. Risk assessment and damage assessment and reporting could help inform this process. To enhance the funds' responsiveness, procedures for rapid post-disaster disbursement could be developed by establishing appropriate governance and control structures and oversight mechanisms, and by pre-defining payout criteria and use of funds.
- Link the DPCFs' post-disaster disbursement to existing post-disaster delivery systems. By disbursing the DPCFs through existing social protection programs—scaled up to target beneficiaries not covered by the programs—the government could reduce its operational costs. The government might consider changing post-disaster benefit delivery from a cash basis to a digital basis to speed up the delivery of funds and improve discipline and transparency.
- Develop detailed guidance on financial management and oversight of the DPCFs. As with other types of public funds, guidelines on financial management (including accounting, financial reporting, auditing, risk management, and oversight) are needed to ensure accountability and transparency. A standard operation manual could be developed to guide the local authorities in implementing the DPCFs.

A summary of recommended options are summarized in Table ES.1. below.

Table ES.1. **Recommended Options for Improving the DPCFs**

Area	Recommendation	Key regulations	Responsible institution	Time frame
1. Policy and legal mandate	Clarify DPCFs' policy and legal mandates, including targeted beneficiaries, scope of activities, and key principles guiding operations	Decree 94, DPCL 2013	MARD, MoF	MT
2. Funding coordination mechanism	Establish coordination mechanisms for DPCFs and other sources of funding; establish funds delivery channel at central and local levels	Decree 94, Decision 01/2017/QD-TTg	MoF, MARD	ST
3. Institutional frameworks	Establish roles and responsibilities of institutions involved in the DPCFs	Decree 94, DPCL 2013	MARD, MoF	MT
4. Fund structure	Establish guidance on governance structure for DPCFs Establish equalization transfer structure	Decree 94, DPCL 2013	MARD, MoF	MT

(Continued on the next page)

Area	Recommendation	Key regulations	Responsible institution	Time frame
5. Risk and damage assessment	Institutionalize risk assessment at all levels Provide consistent methodology and unit cost norm for financial assessment of damage/loss, including clarification of government's liabilities Allow the deployment of technology to transform the data collection process for financing from DPCFs	Decree 94, Circular 43/2014	MARD, MoF, MPI	
6. Financing strategy	Allow transfer from state budget Allow insurance and other risk transfer instruments Allow prudent asset management linked to the DPCFs' liabilities	DPCL 2013, Decree 94	MARD, MoF	MT
7. Contributions	Revisit level of contribution Revise eligibility for contribution Outsource collection	DPCL 2013, Decree 94	MoF, MARD	MT
8. Use of funds	Clearly define payout criteria and pre-define use of funds Establish process for use of funds through a standard operation manual Link the fund flows to a delivery network Switch from cash payment to digital payment	Decree 94, new circular	MoF, MARD	ST
9. Financial management	Provide guidance on accounting, financial reporting, and auditing	Decree 94, new circular	MoF, MARD	ST
10. Oversight	Provide guidance on inspection and supervision	Decree 94, new circular	MoF, MARD	ST

Note: ST = short term; MT = medium term; MPI = Ministry of Planning and Investment.

INTRODUCTION

Vietnam is exposed to multiple natural hazards, including tropical cyclones, tornados, floods, and drought. It is estimated that about 60 percent of its total land area and 71 percent of its population are at risk of cyclones and floods. The annual average direct economic losses from natural disasters are estimated at about 0.8 percent of the country's gross domestic product (GDP). During the last 30 years, Vietnam paid, on average, VND 19 trillion (US$897 million in 2014 prices) per year toward losses from floods and tropical cyclones (World Bank 2017). Extreme natural events continue to challenge Vietnam's economic growth potential.

Given the effects of disasters on public finance, the Government of Vietnam (GoV) has made enhancing the country's resilience against natural disasters a key policy objective. A set of laws and regulations has been promulgated by the National Assembly and GoV to create an enabling legal and institutional framework for financing the country's disaster prevention and control, most notably the Natural Disaster Prevention and Control Law (DPCL) issued in 2013 and the State Budget Law (SBL) revised in 2015. These are the key legal and institutional underpinnings for the establishment and execution of various financing instruments in Vietnam.

Prepared at the request of Vietnam's Ministry of Agriculture and Rural Development (MARD) and Ministry of Finance (MoF), this report aims to support the GoV in taking stock of the current frameworks for financing disaster prevention and control, focusing on the Natural Disaster Prevention and Control Funds (DPCFs). It analyzes the constraints in operationalizing the DPCFs, looks at relevant international experience, and identifies opportunities for improving the DPCFs. The report also serves as an input to inform GoV's revision of relevant regulations governing the DPCFs and other financing instruments as appropriate. The report draws on the significant inputs and responses provided by the MARD, MoF, and the provinces and cities selected for field visits.[2] The expression "disaster" in this report refers to natural hazard events that have significant impact on the livelihoods, economic activities, and assets of various stakeholders.

The report consists of three chapters. Chapter 1 provides background on natural disasters in Vietnam and their economic and financial impacts. Chapter 2 presents a review of the current arrangements for financing disaster prevention and control in Vietnam, including the legal and institutional frameworks for and operationalization of the DPCFs and various other disaster financing instruments. It also provides an in-depth analysis of the DPCFs, identifies issues and constraints that prevent the DPCFs from being fully operational, and presents comparative experience from relevant countries. Chapter 3 recommends a set of options that the GoV could consider for strengthening the DPCFs as part of the country's overall disaster financing strategy.

2 These include Dak Lak, Ho Chi Minh City, Lao Cai, Phu Yen, Vinh Long, and Yen Bai.

NATURAL DISASTERS IN VIETNAM

CHAPTER 1

1.1. Vietnam's Exposures to Natural Hazards

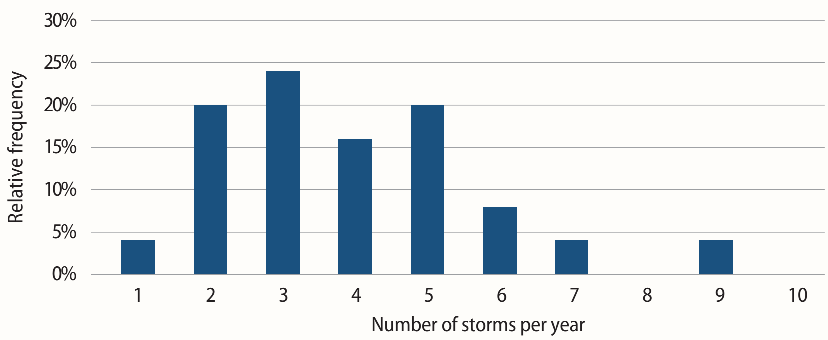
1. With a coastline of over 3,200 kilometers, Vietnam is susceptible to multiple disasters from natural hazards, such as tropical cyclones, floods, landslides, droughts, and earthquakes. Of these, tropical cyclones and floods occur the most frequently and cause the most damage in monetary terms.

2. As part of a catastrophe risk model developed for Vietnam, the risk of floods, tropical cyclones, and earthquake was estimated by simulating future events that might cause damage to the country and predicting the intensity of such simulated events in the regions affected (World Bank 2017).

Tropical Cyclones

3. Together with floods, tropical cyclones have been the most significant peril in Vietnam, both by frequency and severity, with clear trends for seasonality and severity by region. Over a period of 25 years (from 1993 to 2017), a total of 98 tropical cyclones made landfall in Vietnam; this does not include tropical depressions or cyclones that lurked offshore and had an indirect impact on the country. The number of tropical cyclones has ranged between one and nine a year, and there is the potential for more than nine in a year. The annual average is four tropical cyclones, and there is a 36 percent likelihood of five or more per year. See figure 1.1.

Figure 1.1. **Historical Annual Frequency of Tropical Cyclones**

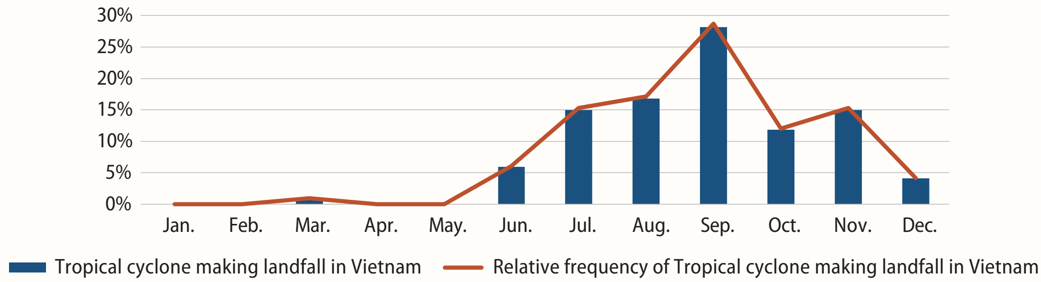


Source: World Bank analysis based on National Hydro-Meteorological Service data for 2008–2017; Vietnam Hydro-Meteorology Yearbook 1993–2012.[3]

3 Central Center for Hydro-Meteorological Forecast. http://danida.vnu.edu.vn/cpis/files/Dac_Diem_KTTV/dacdiemkttv_2012.pdf

4. Timing of the cyclones during the year is clearly characterized by seasonality and by region. Storm season normally starts in June, peaks in September, and phases out in December. The peak of tropical cyclone season falls between July and August in the Northern region, while the Central and Southern Central regions of the country experience the majority of cyclones from September to November. See figure 1.2.

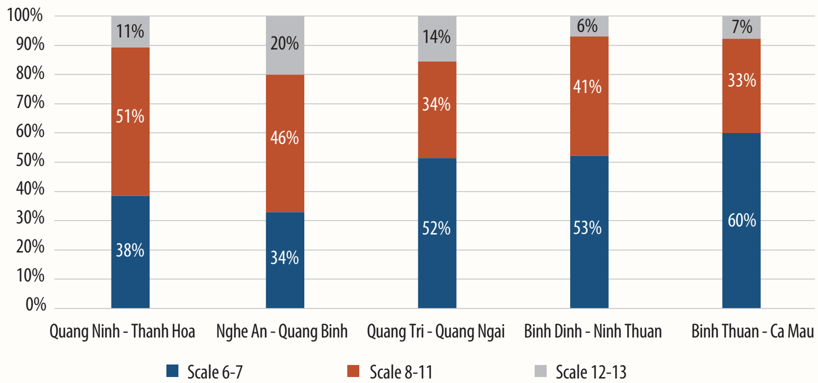
Figure 1.2. **Historical Frequency of Tropical Cyclones by Month (1993–2017)**



Source: World Bank analysis based on National Hydro-Meteorological Service data for 2008–2017; Vietnam Hydro-Meteorology Yearbook 1993–2012.[4]

5. Storm severity seems to differ by region (see Figure 1.3.); the Northern and Northern Central regions tend to have a greater proportion of higher-intensity storms than others and are thus considered higher-risk areas.

Figure 1.3. **Share of Tropical Cyclone Events by Severity and Region**



Source: World Bank analysis based on National Hydro-Meteorological Service data for 1961–2008.

4 Central Center for Hydro-Meteorological Forecast. http://danida.vnu.edu.vn/cpis/files/Dac_Diem_KTTV/dacdiemkttv_2012.pdf

Floods

6. Vietnam is highly susceptible to flooding during monsoon season due to a combination of river plain flooding and flash floods (with associated landslides).[5] River plain flooding is a major problem in the low-lying southern Mekong Delta region of Ho Chi Minh City and in the northern Red River basin surrounding Hanoi. These regions have major concentrations of population, housing, industry, commercial business, and infrastructure, and they are also important areas for agricultural crop and livestock production. Flash flooding is a major problem in the Central Highlands and Central Coastal regions, from Binh Thuan to Thanh Hoa Provinces. The rivers here are mainly short and steep, and the heavy rainfall associated with tropical cyclones results in flash flooding and landslides.

7. From 1961 to 2008, a total of **238 floods** were recorded by the National Hydro-Meteorological Service, with a further 26 events recorded between 1900 and 1960. This implies a grand total of 264 flood events from 1900 to 2008. Great caution must be exercised in interpreting these data, however: prior to 1961, data were not systematically recorded; and since the early 1990s, the density of river-flow gauge stations on the major rivers has been significantly increased.

8. A total of **405 flash floods** were recorded in 36 provinces between 1958 and 2008. Ten provinces alone accounted for 298 incidents (73 percent of the total), all located in the Northwest region. The peak month for flash flooding was July (118 incidents), followed by August (89) and June (66). The frequency of reported flash floods has also increased significantly since 1990, though this may be partly explained by improved recording and reporting systems for flash floods.

Other Perils

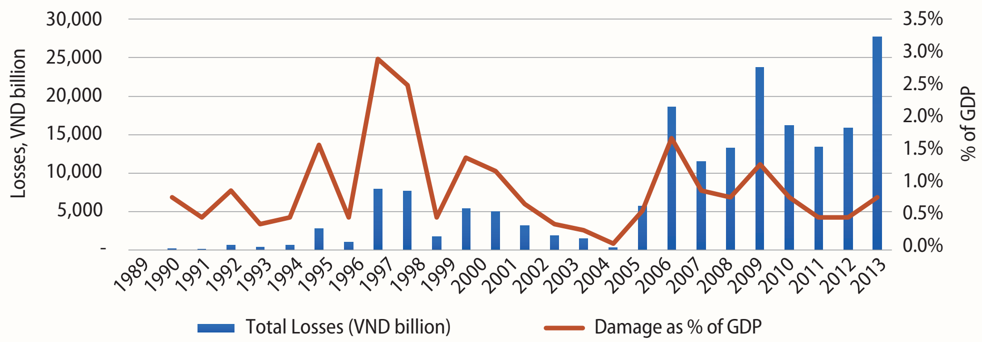
9. Vietnam is generally considered to have a low earthquake exposure. Earthquakes are confined to the Northwest region, which has low population and infrastructure density and therefore low exposure values. According to the GoV's classification of the relative frequency of natural perils, drought and tornado are high-frequency natural hazards in Vietnam; hail, forest fires, and saltwater intrusion are medium-frequency hazards; and frost and earthquake are low-frequency hazards. Agriculture is particularly exposed to seasonal drought, hail, and saltwater intrusion.

1.2. Economic Impacts of Natural Disasters in Vietnam

10. Disaster-related economic losses have been increasing since 2005, with some volatility year on year. As a proportion of GDP, these losses have been relatively stable (or even decreasing slightly) due to significant growth in GDP during this period. Overall, disaster-related losses as a proportion of GDP are between 0.4 percent and 1.7 percent (10th to 90th percentile), with the peak proportion of 2.96 percent in 1996 (figure 1.4).

5 This section and the next (on other perils) draw on World Bank (2010).

Figure 1.4. **Historical Estmited Loses as Proportion of GDP**



Source: World Bank Disaster Risk Financing and Insurance Program calculations, based on Central Steering Committee for Natural Disaster Prevention and Control (CCDPC) data from 1989 to 2013.

Note: The CCDPC estimate of "loss cost" relates to direct economic loss for the public sector only. For a number of reasons, it is likely to be an incomplete estimate of such loss.

11. A previous study by the World Bank (2017) found that Vietnam loses 0.8 percent of its GDP annually because of natural disasters, thereby hindering the country's social and economic development. Data from the Central Steering Committee for Natural Disaster Prevention and Control (CCDPC) from 2006 to 2014 showed that natural disasters caused damage totaling VND 8,570 billion (or US$4.8 billion at the December 2015 exchange rate), left thousands of people dead or injured, and destroyed many of their assets (see table 1.1).

Table 1.1. **Summary of Damage Caused by Natural Disasters: Vietnam, 2006–2014**

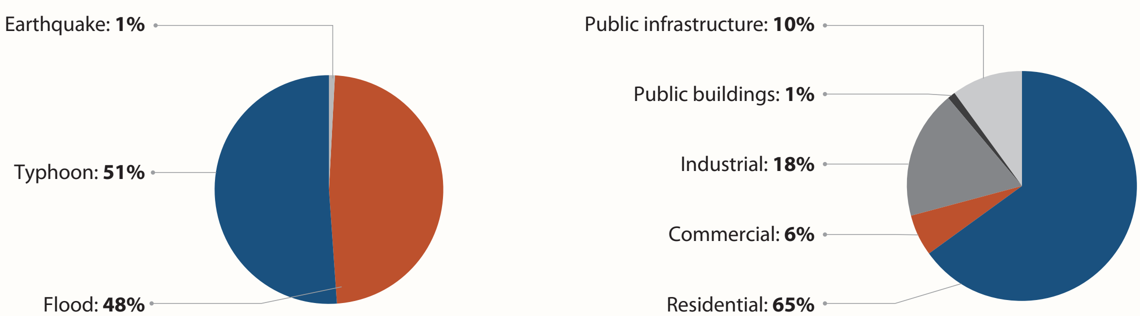
Year	Number of people dead and missing	Number of people injured	Number of houses collapsed or washed away	Number of houses flooded or damaged	Total cost of damage (VND, billions)
2006	553	2,133	267,363	8,397	15,542
2007	492	740	15,825	739,761	11,490
2008	400	241	3,440	212,338	10,992
2009	430	783	24,701	319,273	19,096
2010	256	298	4,558	243,849	5,607
2011	200	206	1,118	437,365	11,496
2012	269	440	6,324	386,678	7,800
2013	313	1,150	11,109	851,393	23,717
2014	133	145	1,985	42,758	2,830
Total	3,046	6,136	336,423	3,241,812	108,570

Source: CCDPC; Ministry of Labor, War Invalids and Social Affairs.

12. In order to gain a better understanding of its financial exposure to disasters, the government worked with the World Bank to develop a probabilistic catastrophe risk model.[6] The model has many applications, including (but not limited to) fiscal/financial impact estimation and financial planning, catastrophe risk insurance markets development, rapid post-disaster estimation, and urban planning and infrastructure design. Key outputs from the model include country or provincial/city risk profiles and financial risk maps, which serve as key inputs to the government's cost and benefit analysis of risk financing options, inform the country's future risk-layering strategy, and help the government put in place an optimal mix of financing instruments.

13. Catastrophe risk profiles were produced for Vietnam and for three cities: Da Nang, Hanoi, and Ho Chi Minh City. These profiles can be used to indicate the frequency of hazard events and to estimate their associated economic and fiscal losses. Figure 1.5 shows the average annual loss distribution across perils (left) and economic sectors (right). Tropical cyclones and flood cause the most damage, while the economic sectors that suffer the most are residential properties, industrial infrastructure, and public infrastructure. In the next 50 years, Vietnam has a 40 percent chance of experiencing an economic loss exceeding US$6.7 billion and a 20 percent chance of experiencing a loss exceeding US$8.1 billion (World Bank 2017).

Figure 1.5. **Average Annual Loss in Vietnam, by Disaster (left) and Economic Sector (right)**



Source: World Bank 2017.

6 Work on the risk model began in 2014 and led to the development of the first country-specific catastrophe risk model for Vietnam.

CHAPTER 2

MANAGING THE FINANCIAL IMPACTS OF DISASTER RISK IN VIETNAM: DISASTER PREVENTION AND CONTROL FUNDS

2.1. Overall Framework for Managing Financial Impacts of Natural Disasters in Vietnam

Legal/Policy and Institutional Framework for Managing the Financial Impacts of Disaster Risk

14. Financial management of natural disaster is considered an important policy objective in Vietnam and is reflected and formalized in a number of laws and regulations that together establish the legal framework for managing the financial impacts of natural disasters in the country. The framework cuts across several policy areas, including disaster risk management (DRM), state budget management, fiscal risk management, public investment, public assets management, and financial sector development as well as regulation of other sectors. A summary of key regulations is provided in table 2.1.

Table 2.1. **Summary of Policies and Regulations for Financial Management of Natural Disasters in Vietnam**

Area	Legal & regulatory framework	Key features
Disaster risk management	• DPCL 2013 • Decree 66/2014	• Principles of disaster prevention, preparedness, response, and recovery • Resource mobilization and delivery • Institutional responsibilities and coordination • Framework for disaster financing
	• Decree 94/2014	• Establishment and management of DPCFs
State budget management	• SBL 2015 • Decree 163/2016	• Management and use of budget instruments • Decision-making authority, funding process, decentralization, reporting, and oversight • Management of nonbudgetary public funds
	• State Reserves Law	• Management and use of state in-kind reserves
	• Decision 01/2016 detailing DPCL 2013 and SBL 2015	• Process for support from central contingency budget • Vertical coordination of central contingency budget and local financing instruments

(Continued on the next page)

Area	Legal & regulatory framework	Key features
Prevention and preparedness	• Public Investment Law 2014 • Public Debt Law 2017 • SBL 2015	• Investments in risk mitigation infrastructure • Medium-term investment plan • Medium-term finance plan
Emergency response and operations	• Decree 30/2017	• Scope of emergency rescue and counterdisaster operations • Funding: state budget, DPCFs
Agriculture support	• Decree 02/2017 (formerly Decision 142/2009 and Decision 49/2012)	• Eligibility for, level of, and process and procedures for support • Funding from central and local contingency budget, DPCFs, state in-kind reserves, and other lawful sources
	• Prime Minister's Decision 315/2011 • New decree under preparation	• Guidance on insurance products and regulations • Premium support from central and local budget
Social protection	• Decree 136/2013	• Scope of disaster-related social assistance • Funding: state budget
Public assets protection	• Public Assets Management Law 2017 • Decree 151/2017	• Financial risk management of public assets including insurance
	• State Capital Investment Law 2014	• Insuring state capital–related assets against disaster risks
	• Law on Construction 2014	• Insuring works under construction against disaster risks

Key Policies for Financial Management of Natural Disasters

15. Key principles, policies, and approaches for DRM in Vietnam are provided in the DPCL enacted in 2013. The four "on-site" principles of direction, forces, means and materials, and logistics under the DPCL and its associated sublaw regulations attach primary responsibilities for disaster response and recovery to local governments. The law is also based on one guiding principle, which is that the state, individuals, and entities are all responsible for disaster prevention and control, with the state taking the lead role.

16. An overarching framework for financing disaster prevention and control in Vietnam is set out under the DPCL 2013, State Budget Law 2015, and other regulations. This includes arrangements for key disaster financing instruments, institutional coordination, and implementation and delivery. The framework covers the DRM life cycle, including preparedness, risk reduction and prevention, risk financing, and disaster response and recovery.

Key Financial Instruments

17. **Budgetary instruments.** The state budget has traditionally been the principal source of disaster risk financing in Vietnam. The State Budget Law (SBL No. 83/2015/QH13), revised and enacted in 2015, allows the establishment of budget-related resources for disaster prevention and

control, including contingency budget, budget (re)allocation, recurrent and capital expenditure, targeted supplementary budget, and temporary budget advancement. Aligned with the principle of decentralizing responsibilities for disaster risk management, the SBL also provides for decentralization of budget for disaster prevention and control.

18. Decree 163/2016/ND-CP further explicates the SBL on financial management of disasters by specifying the decision-making authority for allocation of various budget instruments and financial reserve funds; it also specifies the source of funding and the funding process. Further guidance on the application process and eligibility for financial support from the central contingency budget to subnational governments can be found in Decision 01/2016/QD-TTg by the Prime Minister. Capital investments for longer-term post-disaster reconstruction are also governed by the Law on Public Investment 2014 and associated regulations.

19. **Financial reserve funds** are set up and operated at the central and provincial level under the SBL. The source of these funds comes from annual budget allocation and other lawful funding.

20. **The State Reserve Fund** is established and governed under the National Reserves Law (Law No. 22/2012/QH13) promulgated in 2012. The fund provides in-kind emergency relief in the aftermath of natural disasters and other emergencies that threaten national defense, security, social order, and safety. The law requires that the national in-kind reserves (such as goods, commodities, and warehouses) be covered by insurance. The fund's reserves and operations are financed by the state budget.

21. **Partially budget-financed and nonbudgetary public funds for risk financing.** This category includes the **Fund for Inland Road Maintenance,** established under Decree No. 18/2012/NĐ-CP, Decree No. 56/2014/ND-CP, and Decree No. 28/2016/ND-CP. Circular 60/2017/TT-BTC, which provides guidance on implementation of the decrees, allows the fund to be used for repairing roads damaged by natural disasters. This vehicle is funded from a combination of state budget and revenues from road tolls and fees.

22. Also in this category are **the Natural Disaster Prevention and Control Funds,** established under the DPCL 2013 and Decree No. 94/2014/ND-CP. The DPCFs are set up at provincial level and financed by compulsory contributions from all eligible individuals and entities and other lawful sources, without any allocation from the state budget. They are further governed in part by the SBL and Decree 163/2016/ND-CP, Decree 02/2017/ND-CP, and Decree 30/2017/ND-CP.

23. **Voluntary contributions.** Various laws (DPCL 2013, SBL 2002, Fatherland Front Law 1999) prescribe post-disaster donations to social and charitable institutions as well as donations and direct assistance to institutions and individuals affected by natural disasters. The allocation and use of the voluntary contributions are in accordance with the rules on social and charitable institutions and must be coordinated with the local authorities.[7]

7 For more details, refer to Decree No. 30/2012/ND-CP, issued by the government on April 12, 2012, on the organization and operation of social and charitable institutions; see also Decree 64/2008/ND-CP on mobilization, receipt, distribution, and use of voluntary contributions for recovery from disaster, fire, and serious incidents and for seriously ill patients.

24. **Market-based risk financing instruments.** This category include insurance, a market-based risk transfer instrument that was encouraged (although not formalized) as a financing instrument/source under the DPCL 2013. The Law on Management, Use and Investment of State Capital (Law No. 69/2014/QH13) promulgated in 2014 and its subsequent regulations require that enterprises that manage, use, or are invested in by state capital must insure state assets against natural disasters, among other risks, in order to preserve and grow the invested capital. Along with its associated regulations, the Law on Construction (Law No. 50/2014/QH13) passed in 2014 mandates the insurance of construction works that affect the safety of communities and the environment or that entail special and complex construction requirements. The law also applies to construction works built with public investment. The Law on Public Assets Management (Law 15/2017/QH14) passed in 2016 formalizes financial risk management of public assets by establishing an important principle: that financial risk management measures, including insurance, must be applied to public assets that are highly exposed to natural disasters. Along with related regulations, the Insurance Business Law (Law No. 24/2000/QH10) enacted in 2000 provides important principles for regulating the insurance business, including natural catastrophe insurance. The law covers underwriting, reserving, capital requirements, product design, claims, and data reporting.

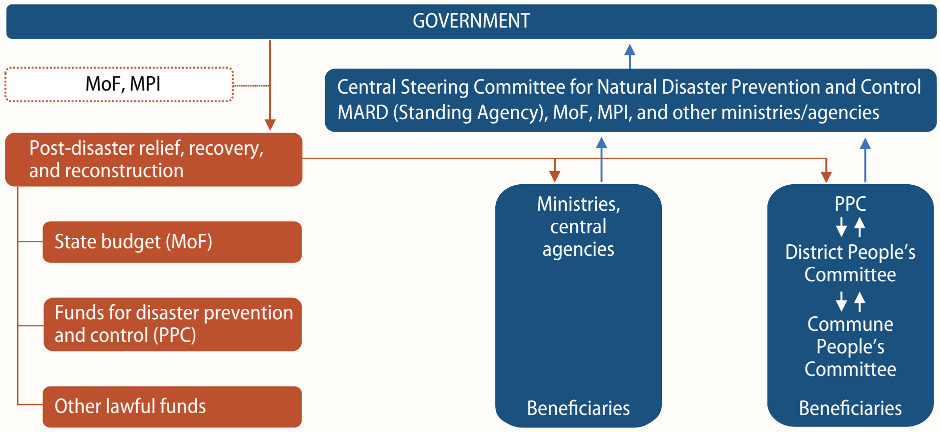
25. A program for **agricultural insurance** was piloted in 2011–2013 under Prime Minister's Decision 315/QD-TTg dated March 1, 2011. The pilot aimed at supporting agriculture producers when they experienced financial losses as a result of natural disasters and epidemics. The program provided premium subsidies at different levels to participating farmers and households: (i) 100 percent for the poor; (ii) 80 percent for the near-poor; (iii) 60 percent for the nonpoor and non-near-poor; and (iv) 20 percent for agricultural production organizations participating in the pilot program. Government policy for scaling up agriculture insurance is under further development following the pilot.Institutional framework for managing the financial impacts of disasters in Vietnam

26. All of the above laws mandate the participation of various institutions involved in financial management of natural disasters in the country. This institutional coordination is also subject to the coordination rules for general disaster prevention and control as set out in the DPCL and associated regulations,[8] which task the CCDPC with coordinating between different ministries and agencies and with assisting the government and prime minister in nationwide activities and operations related to natural disaster prevention and control. CCDPC members include representatives of ministries and agencies;[9] see figure 2.1 for the interinstitutional coordination of disaster prevention and control in Vietnam.

8 These are under Decree 66/2014/ND-CP on division of responsibilities for mobilization, contribution, allocation, and delivery of resources for emergency relief and recovery from natural disasters.

9 Entities represented on the committee are the Ministry of National Defense, Ministry of Public Security, Ministry of Foreign Affairs, Ministry of Transport, Ministry of Construction, Ministry of Agriculture and Rural Development, Ministry of Industry and Trade, Ministry of Planning and Investment, Ministry of Health, Ministry of Natural Resources and Environment, Ministry of Information and Communications, Ministry of Home Affairs, State Bank of Vietnam, Government Office, and Ministry of Labor, War Invalids and Social Affairs.

Figure 2.1. **Institutional Coordination for Post-Disaster Financing in Vietnam**



Note: MPI = Ministry of Planning and Investment; PPC = Provincial People's Committee; ↑ = loss and damage reporting, request for financial assistance; ↓ = post-disaster fund execution process.

Government's Contingent Liabilities from Natural Disasters

27. In Vietnam, natural disasters create a series of explicit contingent liabilities for both central and local government as set out in laws and regulations. Key sources of contingent liabilities include emergency rescue and response operations, assistance for households and the agriculture production sector, rehabilitation and recovery of public assets, and support to businesses, including state-owned enterprises (SOEs).

28. **Financing post-disaster emergency rescue and disaster counter operations.** Government's responsibilities for emergency rescue and response are provided for in the DPCL, SBL, Decree 30/2017/ND-CP, and other sectoral legal documents.[10] These responsibilities include operations such as rescue, relief, and provision of food, medical and other urgent supplies, and psychological support to ensure that affected people can quickly restore their lives. Funding for these operations can be taken from the state budget, DPCFs, and other lawful financial sources.

29. **Post-disaster assistance for households.** Support to households in the wake of a natural disaster is an important part of disaster-related social protection in Vietnam. The government's liabilities are detailed in the DPCL and Decree 136/2013/ND-CP. Key government social assistance programs may offer one-time relief or regular in-community support that may include rice support to households suffering from post-disaster starvation, cash support for heavy injuries, death compensation,

10 These additional documents include Decision 118/2008/QD-TTg promulgating financial management rules for disaster rescue, salvage, and response operations; Circular 01/2010/BGTVT and Circular 28/2017/BGTVT on flood and storm prevention, response, and recovery and disaster response and rescue in the railway sector; Circular 30/2010/TT-BGTVT on prevention, response, and recovery from floods and storms in the road sector; and Circular 37/2010/TT-BGTVT on prevention, response, and recovery from floods and storms and disaster response and rescue in the inland water sector.

immediate and regular support to children who have lost a parent in the disaster (and to the custodians of these children), and particularly cash support for rebuilding the housing of poor, near-poor, and disadvantaged households whose houses collapsed, were swept away, or were completely burned due to natural disasters. These programs can be financed out of local government budgets and support from other organizations and individuals.

30. **Post-disaster support for agriculture sector.** Post-disaster support to the agriculture sector is a policy priority that is prescribed in several laws[11] and detailed in Decree 02/2017/ND-CP. Under this policy, the government provides seeds, animals, seafood, or part of initial production costs to restore agriculture production that was damaged by natural disasters. The decree provides details on eligibility for support, level of support, and the process and procedures of support. Funding for this program comes from central and local contingency budgets, DPCFs, state in-kind reserves, and other lawful sources.

31. The 2011–2013 agriculture insurance pilot was part of the government's effort to improve rural livelihoods and promote agricultural production and resilience. Sources of funding and support mechanisms for the pilot program came from both central and local governments' budget where funding from central budget was based on a prior agreed cost-sharing formula.[12]

32. **Post-disaster rehabilitation and recovery of public assets.** Disaster-related contingent liabilities for the government arise from asset ownership and management. The central government is legally responsible for rehabilitation and reconstruction of public assets that it manages and uses, and the same applies for subnational governments.

33. **Post-disaster cost-sharing arrangements.** The central government's contingent liability can also arise out of cost-sharing arrangements for disaster risk financing, as provided by laws and regulations. While primary responsibilities for disaster response and recovery are with subnational governments (as stipulated in the Law on Natural Disaster Prevention and Control), financial assistance to subnational governments from central contingent budget is allowed under the State Budget Law and Decision 01/2016/QD-TTg by the Prime Minister. Eligible expenditures for this financial support include social assistance, agriculture support, and repair and recovery of critical lifeline infrastructures damaged by disasters. The regulations provide no explicit and universal formula on cost-sharing across support programs and instead empower the prime minister to decide on this issue, except for those cases provided under post-disaster agriculture and social assistance support programs. Under special circumstances, the prime minister may instruct that financial assistance be provided through advancing the following year's state budget.

34. The cost-sharing arrangement between national and subnational governments does not seem to explicitly provide any incentives for local governments to undertake risk mitigation measures or make use of proactive risk transfer mechanisms such as insurance. This is the case even though the cost-sharing arrangement is designed to ensure that local governments have used up all resources available before resorting to the national government for assistance. Note that the DPCL requires ministries and

11 The relevant laws are DPCL 2013, SBL 2015, Veterinary Law 2015, Aquaculture Law 2003, Forest Protection and Development Law 2004; and Vegetation Protection and Quarantine Law 2013.
12 Article 1, Prime Minister's Decision No. 315/QĐ-TTg dated March 1, 2011.

local provincial governments to integrate disaster risk mitigation and resilience into their investment planning and sectoral and local development planning.

35. **Post-disaster assistance to businesses.** Assistance to SOEs or other types of contractual arrangements may potentially pose another source of contingent liability for the government. In Vietnam, the Corporate Income Tax Law 2008 and the Revised Corporate Income Tax Law 2013 and associated decrees and circulars[13] allow for tax breaks for businesses in case of physical damage from disasters. In case of disaster-related damage to assets established from a government-guaranteed loan, the government would fulfill the obligation of repayment as guarantor if the enterprise is not able to repay. Other potential government guarantees to SOEs represent another source of contingent liabilities if performance by SOEs is affected by natural disasters.

Operational Framework for Managing the Financial Impacts of Disaster Risk in Vietnam

Understanding Risk: Historical Damage Assessment

36. The CCDPC maintains a loss and damage database that includes mostly public sector loss and damage data. Losses and damage are assessed by local CCDPC offices in coordination with communal, district, and provincial authorities, consolidated at the provincial level, and then reported to the CCDPC. Loss and damage assessment and reporting follow guidelines from MARD and the Ministry of Planning and Investment (MPI) under Circular 43/2015/TTLT-BNNPTNT-BKHĐT. Hazard and vulnerability data are housed within the MARD, Ministry of Environment and Natural Resources, technical agencies, and local authorities.

37. The system under Circular 43 seems mostly to capture the physical and economic damage and loss in the public sector and households, with little reference to the private business sector. There is no standardized methodology for financial assessment across provinces. In addition, the assessment does not clearly show the government's share in the liability for the damage or loss.

38. For decision making on support from state budget, additional assessment and verification have to be carried out by line agencies (i.e., social protection, agriculture) in conjunction with the local CCDPC office and related stakeholders. In addition, assessment and reporting are done manually and do not require the collection and documentation of damage evidence such as photographs or video footage. The manual process for reporting could significantly delay the process for claiming relief and recovery support, and it also reduces the reliability and transparency of the assessment.

Risk Treatment: Financing Risk Reduction

39. The DPCL 2013 recognized both risk reduction and risk financing as integral parts of a comprehensive DRM agenda and required that risk reduction be integrated into various public investments.

40. Risk mitigation is financed by a mix of capital and recurrent government expenditure in Vietnam and is subject to the Public Investment Law and SBL 2015. While most nonstructural prevention work

13 These include Decree No. 218/2013/NĐ-CP, Decree No. 12/2015/NĐ-CP, and Ministry of Finance Circular No. 96/2015/TT-BTC on corporate income tax.

is financed out of recurrent expenditure, structural works are financed out of capital expenditure. The MPI or its equivalent at provincial level is tasked with capital planning for investments that have been approved by the government or Provincial People's Committee (PPC), and the Ministry of Finance or provincial departments of finance would then allocate resources in their budget planning. Investment planning is subject to the medium-term investment capital planning under the Public Investment Law and medium-term budget planning under the SBL 2015. There was no information available on financing risk reduction.

41. Risk reduction financing is allowed from the funds for disaster prevention and control under the DPCL 2013 and provided under Decree 94 despite not being a priority. The permissible threshold under Decree 94 is maximum VND 1 billion (approximately US$45 million) per construction. However, neither the law nor regulations clearly prescribe how funding for risk mitigation from the funds and state budget is coordinated.

Risk Treatment: Financing Residual Risks

42. Among various financing instruments available for disaster response and recovery, the government in the past relied heavily on contingency budgets to finance emergency response and early recovery, and on (re)allocation of capital expenditure to finance reconstruction. Table 2.2 provides an overview of disaster risk financing instruments in Vietnam.

Table 2.2. **Financial Instruments Available to the Government of Vietnam for Disaster Financing**

Disaster risk	**Source of funds (type of DRFI instrument)**	**Funds available (maximum)**
High-risk layer (such as major floods, major typhoons)	Donor assistance	Funds are unpredictable and unreliable.
	Disaster risk insurance	At least 1,000 organizations/entities in Vietnam have purchased insurance policies for public assets. *Pilot Agricultural Insurance Program*. As of the end of 2014, the cumulative revenue from premiums paid amounted to over VND 394 billion (according to ISA/MoF).
Medium-risk layer (such as regional floods)	Contingency budget	A 2–4% share of the total planned expenditure can be set aside every year at all budget levels for contingency. Part of the contingency budget can be used to finance cash transfers and relief efforts in the aftermath of a natural disaster.
		About 2% of total central and local expenditure, or VND 19,200 billion (approximately US$851 million), was set aside in 2014 as contigency budget, of which the government spent VND 1,538.9 billion (approximately US$73 million); this comes to 14.9% of the central contigency budget available for disaster relief and recovery purposes.

(Continued on the next page)

Disaster risk	Source of funds (type of DRFI instrument)	Funds available (maximum)
Medium-risk layer (Continued)	Financial reserve fund	No information is available on the year-end balance of this fund. However, information on the allocation of the state budget for the fund is available. According to the GSO, in 2012 the state allocated VND 441 billion (US$20 million), or 0.05% of the state budget expenditure, to the fund. The preliminary amount for 2013 was VND 100 billion, or 0.01% of the total expenditure of the state budget in 2013.
	Natural Disaster Prevention and Control Fund	This fund was recently put into operation. According to the CCDPC, the fund has been set up in 56 provinces. As of October 2017, the fund's cumulative total was VND 952 billion (approximately US$42 million), about 42% of which was spent (see annex 1).
	Fund for Inland Road Maintenance	In 2015 the Fund for Inland Road Maintenance reached a total of VND 6,381 billion (approximately US$286 million), and the total amount spent to repair roads in the aftermath of natural disasters reached VND 473 billion (approximately US$21 million).
	State budget allocation for capital investment in the aftermath of a natural disaster	In its annual budget plan, the state allocates funds for the construction, rehabilitation, and upgrading of natural disaster mitigation projects. The state budget also finances the recurrent and operational costs of the organizations in charge of natural disaster control. The disaggregated amount for the budget allocation for these purposes is not available.
Low-risk layer (such as annual localized floods, landslides)	State Reserve	The size and value of State Reserve (in-kind) are not available to the public. In 2013 the government used 67,223 tons of rice out of the State Reserve to support disaster victims.

Source: Based on government sources.

Note: DRFI = disaster risk financing and insurance; GSO = General Statistics Office; ISA = Insurance Supervisory Authority.

43. The financial instruments listed in table 2.2 were used to fund the government's disaster-related liabilities both at central and local levels. There seems to be some overlap among the instruments, however, particularly between contingency budget and the DPCFs, both concerning sources of financing and concerning targeting of beneficiaries. This overlap occurs in the absence of clear guidance on prioritization and coordination of various instruments at local levels. See table 2.3, which highlights the rows on contingent budget and DPCFs to show where the instruments overlap.

Table 2.3. **Comparative Overview of Disaster Risk Financing Instruments in Vietnam**

	Preparedness	Risk reduction	Emergency relief and rescue operations	Relief (social assistance)	Agriculture support	Other short-term response	Rehabilitation and reconstruction	DRM exclusive	Carryover	Centralized/ decentralized
Contingent budget	√	√	√	√	√	√	Limited to critical infrastructure	No	No	• Central • Provincial • District • Commune
Budget reallocation	√	√		√	√	√	√	No	No	• Central • Provincial • District • Commune
Investment expenditure		√	√					No	No	
Recurrent expenditure	√		√					No	No	
Financial reserve fund				Limited	Limited	Limited	Limited	No	Yes (up to 25%)	• Central • Provincial
Disaster prevention and control fund	√	√	√[a]	√	√[b]	√	Limited to critical infrastructure	Yes	Yes	• Provincial
Road maintenance fund							√	No	Yes	• Central • Provincial
Tax breaks							√	No	No	
Agricultural insurance					√			No	No	• Provincial

Source: Based on government sources.

Note: a. Decree 30/2017/ND-CP, Article 22. b. Decree 02/2017/ND-CP, Article 7.

Executing Post-disaster Resources

44. A process for post-disaster resource execution has been established and institutionalized for support from the state budget. This process starts with the setup of an interinstitutional task force for damage assessment and verification as provided in Circular 43/2014. A separate damage assessment process applies for social assistance and agriculture support. These assessment processes are often manual and paper-based.

45. Support from the state budget is linked to the existing social assistance delivery and agriculture support system. If the province's request for support meets funding eligibility requirements, the provincial authorities would normally advance the funds out of pocket and then get reimbursed from

the central government. In practice, not every province is able to advance funds, and hence delays in response and recovery have been seen in many provinces, particularly the poorer ones.

46. Support delivery is predominantly cash-based and documented on paper. The use of bank accounts and digital payment has not yet been introduced. Digital-based technology has not been adopted in any of the processes mentioned above.

47. Neither DPCL 2013 nor Decree 94 states clearly how post-disaster resources are to be executed and delivered from the DPCFs in the provinces; the issue is complicated by the fact that in most provinces the targeted beneficiaries seem to overlap with one another. This clearly shows that provincial level coordination is needed—for sources of funding, as well as targeting of beneficiaries and modalities of delivery.

2.2. Disaster Prevention and Control Funds: A Review

Legal Mandate and Scope of Activities

48. The DPCF is established under the DPCL 2013 and Decree No. 94/2014/ND-CP and replaces its predecessor, the Fund for Flood and Storm Prevention and Control; the old fund was established under the Ordinance for Flood and Storm Prevention and Control and Decree 50-CP, issued in 1997 by the Government of Vietnam (see box 2.1). The establishment of the DPCF was part of an effort to "socialize" disaster prevention and control, alleviate the burden on state budget, and promote mutual support.

49. The DPCFs are set up at provincial level, managed by the PPC, and financed by compulsory contributions from all eligible individuals and entities and other lawful sources. The funds do not receive any allocation from the state budget for capitalization or operation and operate on a not-for-profit basis. An overview of the DPCFs is presented in figure 2.2.

50. The DPCL (in Article 10) provides a broad mandate for the fund as a financial instrument, allowing it to be used for general disaster prevention and control activities by the state and subnational governments; at the same time, the law is prescriptive in its list of activities eligible for its funding. Priority for funding from the DPCFs is given to post-disaster response, including (i) emergency relief for food, water, medical supplies, and other immediate needs for those affected by natural disasters, (ii) support for repair of housing, health facilities, and schools, and (iii) hygiene and sanitation response in disaster-stricken areas. The long list of specific activities that are eligible for financing out of this fund are detailed in Article 30 and 32 of the DPCL, Decree 94/2014/ND-CP, Decree 30/2017/ND-CP, and Decree 02/2017/ND-CP (see table 2.4). The DPCF's broad mandate may give some flexibility in implementing the activities as required by the DPCL 2013; but the activities eligible for funding are narrowly prescribed. It may therefore be unclear how to treat an activity that by its nature falls under the law's mandate but is not specified in sublaw regulations—for example, a long-term support activity. Local governments therefore need clear guidance in order to implement the legal mandate.

Box 2.1. **Summary of the Fund for Floods and Storms Prevention and Control Established under Decree 50-CP, 1997**

1. **Legal mandate:** Used for repair of dykes, and for flood and stormprevention, control, and recovery.
2. **Perils:** Only floods and storms
3. **Scope of activities:**
    - Training for protection of dykes
    - Practice of flood and storm prevention and control
    - Support for dyke response
    - Dyke patrol during storm and monsoon seasons
    - Support for repair of schools, hospitals, health facilities, and other public works inthe local area to promote recovery
    - Procurement of necessary equipment for human rescue and relief from floodsand storms
4. **Governance:**
    - Operated as an independent, not-for-profit public fund/entity under direct management of the Provincial People's Committee, with the PPC chair responsible for the overall governance of the funds and for acting as holder of the funds' accounts
    - Established at provincial and district levels
    - Coordinated between steering committees for flood and storm prevention and control and financial authorities at different levels for funds management
5. **Financial management:**
    - Financial flows in practice managed by provincial departments of finance in the same way that a line of budget is managed
    - Funds' finances reported to next-in-line financial authorities
    - Accounting rules subject to the ordinance on accounting
6. **Compulsory contribution:**
    - Individual: 1kg rice per eligible contributor from farming sector, and2kg rice per eligible contributor from nonfarming sector
    - Enterprise: 0.0002 of the enterprise's total production/business capital, but notexceeding VND 5 million
    - Contribution sharing: 60% of contribution to provincial funds, and 40% to districtfunds

Table 2.4. **Qualifying Activities for the DPCFs as Prescribed under DPCL 2013 and Related Regulations**

	DPCL 2013		**Decree 94/2014/ND-CP**		**Decree 30/2017/ND-CP**	**Decree 02/2017/ND-CP**	**Decree 136/2013/ND-CP**
	Activities	**Beneficiaries**	**Activities**	**Beneficiaries**	**Activities**	**Activities**	**Activities**
Type of natural disasters	Storm, tropical depression, tornado, lightening, heavy rain, flood, flash flood, flooding, landslides, saline intrusion, heat, drought, freezing, hail, earthquake, tsunami, and others		Same as DPCL 2013		Same as DPCL 2013	Same as DPCL 2013	Events as stipulated under the Ordinance on floods and typhoon prevention and control 1993 and revised in 20
Preventative/ preparedness			Dissemination of legal knowledge; rehearsal of planning and disaster prevention and control operations at communal level				
Response before disaster			Evacuation; medical care; food, water for evacuated people; support for disaster observation, information, notice, warning, alerts in communities				
Emergency relief (during and immediately after disaster)	Emergency relief and rescue operations	• Injured individuals • Families with fatality • Households or individuals who have lost their houses; who lack food, water, and other essentials; and whose life and health are at risk • Special attention to the vulnerable			Search, response, rescue		
	Support for food, medical and immediate supplies; psychological support		Food, water, medical supplies, and other immediate needs[a]	Affected people			
	Damage assessment						
	Environmental hygiene response and pandemics prevention and response in disaster-affected areas		Hygiene and sanitation response[a]				

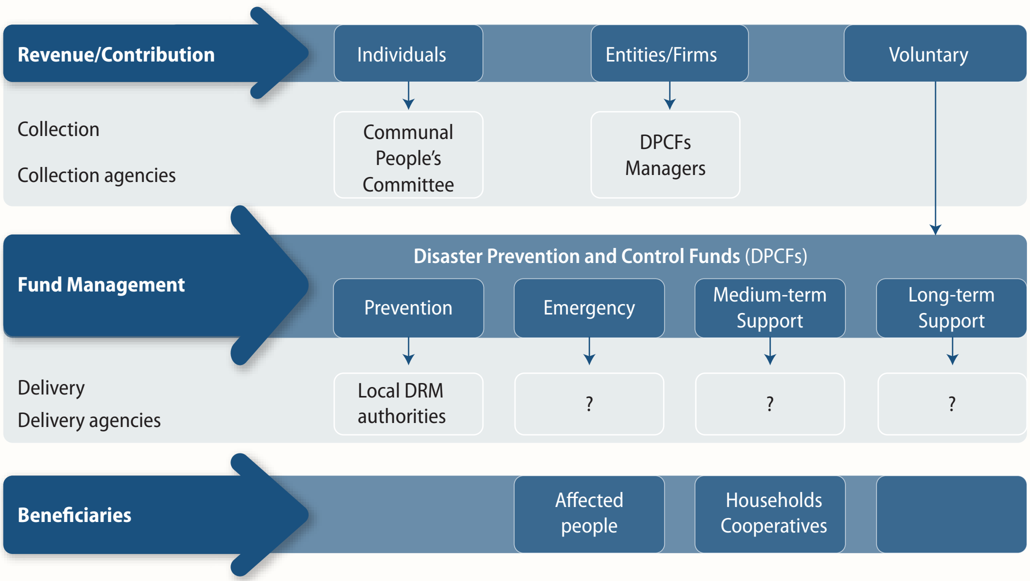
(Continued on the next page)

	DPCL 2013		Decree 94/2014/ND-CP		Decree 30/2017/ND-CP	Decree 02/2017/ND-CP	Decree 136/2013/ND-CP
	Activities	**Beneficiaries**	**Activities**	**Beneficiaries**	**Activities**	**Activities**	**Activities**
Medium-term support	Support for seeds, crops, animals, essential equipment, fuels for production restoration	• Entities or individuals experiencing damaged agricultural production • State entities, armed forces • Public service delivery and enterprises that have assets as prescribed				Support for damaged crops, forestry, aquaculture, animals, salt production	
	Provision of materials and essential goods; implementation of price and market stabilization						
	Repair, recovery of disaster prevention and control works and offices/ buildings, transport, telecommunications, irrigation, power, schools, health facilities, other damaged lifeline public infrastructures		Repair of housing, health facilities, and schools[a] Repair of disaster evacuation facilities or emergency repair of disaster prevention and control works worth less than VND 1 billion/ construction				Repair of housing for the poor, near-poor, and disadvantaged households whose houses collapse, fall and are swept away (not by damage percentage); support less than VND20 million (approximately US$880 per household)
Long-term support	Repair, recovery, and upgrading of disaster prevention and control works, transport, public infrastructures	Entities, individuals, state agencies, public service delivery units, public utility enterprises damaged by disasters					
	Communications and community awareness raising on disaster prevention and control		Dissemination of legal knowledge				

Source: DPCL 2013, Decree 94/2014/ND-CP, Decree 30/2017/ND-CP, and Decree 02/2017/ND-CP.

Note: a. Prioritized by DPCL for use under DPCFs.

Figure 2.2. **Overview of Natural Disaster Prevention and Control Funds: Funding Sources, Delivery, Recipients**



51. The scope of activities covered under Decree 94/2014/ND-CP is narrower than the scope under the DPCL 2013, as suggested by table 2.4. It is not clear why this change was made. However, some of the activities allowed under the DPCL 2013—for example, support to agriculture production and emergency operations—have been captured in other decrees.

52. Beneficiaries eligible for the DPCF are broadly defined by both the DPCL 2013 (Article 9) and Decree 94/2014/ND-CP as "those affected by natural disasters". This may lead to a broad interpretation of beneficiaries by implementing agencies. In addition, there is no clear guidance on how, when, and by whom support from the funds will be delivered to end beneficiaries. The difference in beneficiary coverage in these two regulations and the lack of concrete guidance may potentially cause inconsistency in interpretation application of the Decree and benefits delivery across provinces.

53. The scope of activities and beneficiaries covered by the DPCFs as prescribed both in the DPCL 2013 and related decrees seems to overlap with the scope of activities and beneficiaries covered by contingency budget funding as specified under the DPCL 2013 (Articles 8, 9, 30, 32) and the SBL 2015 (Article 10), Decree 163/2016/ND-CP (Article 7), and Decree 02/2017/ND-CP. While contingency budget mainly targets the poor, near-poor, and others who constitute a subset of beneficiaries the DPCFs also cover, there is no explicit guidance as to how these two funding sources are coordinated at the local level.

54. Decision 01/2016/QD-TTg advanced the coordination of different financing instruments by clarifying rules for financial support from central contingent budget to provincial governments, specifically by indicating that provincial government must take into account the availability of DPCFs before applying for central support. However, there remains a gap in bridging these two sets of legal

instruments governing the management of these two financing instruments at the local levels, which may impede efficient and effective post-disaster relief and response.

55. The mandate and scope of the DPCFs need to be reviewed as part of broader disaster risk financing arrangements in the country, as suggested by table 2.3 on scope of various related instruments. Given the existence of various disaster risk finance instruments created under various laws and regulations and available to the authorities, particularly at the local level, there is also a need to review and coordinate these legal and financial instruments to ensure an optimal combination of risk financing instruments that is cost-efficient, timely, and effective.

56. As defined under the SBL 2015 (Article 4.19), the DPCFs are a nonbudgetary public fund and subject to regulations under the SBL 2015 and Decree 163/2016/ND-CP on financial management and reporting. However, there is currently no regulation governing financial management or reporting of the funds.

57. Institutional frameworks that set out stakeholders' roles and responsibilities are important to ensure stakeholders' accountability. The DPCL 2013 and Decree 94/2014/ND-CP provide for the involvement of a range of statutory bodies and agencies.

58. At the central level, the roles of key actors are as follows:

- The **GoV** issues legal documents guiding the establishment, management, and supervision of the DPCFs.
- The **Prime Minister** has the authority to transfer funds of one province to another based on proposals by the CCDPC, MARD, and MoF.
- **CCDPC** leads and coordinates with **MoF, MARD,** other ministries, ministerial-level agencies, and other relevant government agencies to monitor the implementation of Decree 94/2014/ND-CP and to prepare an annual consolidated report to the prime minister.
- **CCDPC** leads and coordinates (i) with the PPC chair to transfer funds in case of emergency, and (ii) with **MARD and MoF** to prepare a proposal on treatment of funds' balance for the prime minister's decision on funds transfer to provinces severely impacted by disasters.
- **MARD** leads, coordinates, and prepares overall inputs for the GoV's legislation and regulations on the DPCFs.
- **MoF** coordinates with **MARD** and related agencies and prepares guidelines on financial management of the DPCFs.

59. At the local level, the roles of key actors are as follows:

- The **PPC** is responsible for implementing funds collection and leads the inspection and supervision of the funds execution and activities; it handles public disclosure of the funds in accordance with relevant regulations.
- The P**PC chair** is responsible for establishing the provincial DPCF and appoints the fund director.
- The chairs of the **District People's Committees** and **Commune People's Committees** are responsible for collection of contributions under their mandate.

- The DPCF management unit is housed within the provincial **Department of Agriculture and Rural Development (DARD).**

60. The DPCL 2013 and Decree 94/2014/ND-CP give the chair of the PPC power on all matters related to the DPCFs; but they provide limited guidance on how institutions (for example, the fund management body) should be set up at the local level to achieve the funds' mandates and objectives, or on how various local agencies/institutions (for example, departments of finance, departments of agriculture and rural development, and related agencies) should coordinate with one another for DPCF financing.

61. The MoF and provincial departments of finance have an important role in the ownership and management of the DPCFs. These funds require significant competence in both financial management and disaster risk management. Financial authorities with expertise in public financial management and oversight should therefore play a strong role in the funds' management. In addition, the MoF often manages the government's wider disaster risk financing strategy; its leadership in reserve fund management would support and build on this agenda.

62. The government may want to revisit the articles on stipulating contributions from citizens based on the Law on Local Governments 2015 and Law on Government Organization. Under the Law on Local Governments (Article 3.19.3.c), the Provincial People's Council determines the contribution of province residents, while the Law on Government Organization does not provide for that the central government is responsible for deciding contributions from the people. Thus current provisions under Decree 94 may have breached these two laws by allowing the central government to stipulate contributions from citizens for provincial funds and transfer the funds from one province to another.

63. The structuring of the funds only at the provincial level may slow down the decision-making process for funding relief and recovery, particularly when there is a critical need for timely funding. While contingent budgets are set up at all four levels of government to facilitate the "on-site" response, provinces under review found that the process of applying for funds from ground up may be time-consuming.

Operational Arrangements

Performance of DPCFs

64. Between the promulgation of Decree 94/2014/ND-CP and October 2017, 56 DPCFs were established. Total cumulative collections were VND 950 billion, of which almost VND 400 billion was spent (see annex 1). However, many constraints and challenges were reported during implementation of these funds.

DPCF Governance Structure

65. Due to limited guidance on establishment of the DPCFs, various governance structures have been set up in 56 (out of 63) provinces where the funds have been established. Some provinces have set up a structure that consists ofa fund management council and a fund administration unit, while others have set up only a fund administration body (see annex 1). The functions of these bodies also vary from province to province. The absence of guidance has also delayed the establishment of the funds in many provinces.

66. Decree 94/2014/ND-CP stipulates that the fund management body be housed in the Department of Agriculture and Rural Development. It is not clear why this body must be housed in the DARD. There are potentially other options that would better facilitate the province's arrangements and its ability to coordinate this fund with other financing instruments. In practice, more than one-third of established funds are not housed in the DARD.

DPCF Funding Model and Strategy

67. Financial risk assessment could provide helpful information for provincial level financial planning for disasters, including shaping of the DPCFs' funding strategy. Most local authorities in Vietnam have not conducted financial risk assessment due in part to limited technical expertise; the exceptions are provinces and cities such as Da Nang, Can Tho, and Hue, where development partners supported such assessment exercises. None of the provincial funds has conducted a risk assessment to inform its financing strategies. Box 2.2 presents the experience from Mexico on how risk assessments could support the government's risk financing strategy.

68. None of the established funds under review has developed a funding strategy that takes into account management of the fund's liabilities and assets over short-, medium-, and long-term horizons. Annual plans for revenue collection and expenditure are prepared instead.

69. DPCFs' current funding relies solely on contributions from eligible individuals and entities/firms and on limited voluntary contributions (if any). It was not clear why the fund's capitalization from the state budget was excluded from the DPCL 2013 when it is not preempted under Article 10 of the SBL 2015, assuming the fund's mandate, revenue, and scope of activities do not overlap with those financed by the state budget. In other parts of the world, it is not uncommon for similar funds to be funded by the government budget (see table 2.5). If there is any shortfall in funding the DPCFs, they cannot rely on any other financial resources until additional contributions are collected.

Table 2.5. **Funding DRM Funds in Select Countries**

Fund	Funding	Allocated resources kept off-budget	Dedicated subaccounts for relief, reconstruction, prevention, etc.
Colombia: National Fund of Disaster Risk Management	The source of funding is budget (re)allocations and donations.	X	X
Costa Rica: National Emergency Fund	The source of funding is extraordinary transfers from state institutions; taxes, donations, and loans from individuals and organizations; budget allocations; transfer of 3% of surplus of all public institutions; and investment benefits.	X	
India: National Disaster Response Fund	The source of funding is national budget allocation and voluntary contributions.	X	

(Continued on the next page)

Fund	Funding	Allocated resources kept off-budget	Dedicated subaccounts for relief, reconstruction, prevention, etc.
Indonesia: Rehabilitation and Reconstruction Fund	As a national budget line item, the fund is renewed every year on the basis of a proposal from the National Disaster Management Agency (BNPB). It often needs to be complemented by budget reallocation.		
Mexico: FONDEN	Each year, at least 0.4% (c.US$800 million) is allocated to relief and reconstruction, prevention, and the agricultural fund for natural disasters (Art. 37 of Budget Law). If insufficient, extra resources are transferred from other programs.		X

Box 2.2. Using Risk Assessment to Support the Government's Risk Financing Strategy: The Case of Mexico

FONDEN is Mexico's Fund for Natural Disasters. It was established in the late 1990s as a mechanism to support the rapid rehabilitation of federal and state infrastructure affected by adverse natural events.

Since 2007, the FONDEN Technical Committee has conducted various studies to better assess natural disaster risks in Mexico. The Design of Financial Mechanisms to Protect the Assets of the FONDEN Trust against the Risks of Earthquake, Flood, and Tropical Cyclone initiative aimed to identify the assets exposed to natural disasters, including roads and bridges, hospitals, schools, hydraulic infrastructure, and low-income housing. The initiative relied on three components:

1. *Data gathering.* An asset inventory was developed that included the key variables required for evaluation of vulnerability and loss of infrastructure in the database. Hazard information was also included.
2. *Hazard risk modeling.* Earthquake, tropical cyclone, and flood hazard models were developed to assess the impact of those disasters on the assets. Vulnerability functions for each type of infrastructure were also developed.
3. *Financial modeling.* Probabilistic risk modeling and actuarial analysis of historical losses were conducted to develop a disaster risk financing strategy (retention and transfer) for the infrastructure.

The Institute of Engineering of the Universidad Nacional Autónoma de México (UNAM) was in charge of the technical coordination of the initiative. UNAM integrated the results into the Loss Estimation System for Federal Risk (R-FONDEN). R-FONDEN is a probabilistic catastrophe risk model that simulates disaster events and provides risk metrics such as annual average loss and loss exceedance probability curves.

R-FONDEN has been used to improve the individual insurance policies of the federal agencies. For instance, it enabled the design of an insurance program for the Ministry of Transport that addressed federal roads and bridges, which had been difficult to insure due to insufficient asset information. It has also contributed to improve the design of the insurance program of the Ministry of Education.

Source: FONDEN 2011; World Bank 2012.

70. The funds can have reserves, which can be carried over to the following fiscal year. This feature differentiates the DPCFs from those budget instruments that cannot accumulate after one fiscal year and that are used for multiple risks and purposes. Having an instrument with a dedicated, multiyear reserve fund is important for a country's overall disaster risk financing arrangements.

71. DPCFs' risk financing strategy is based on retaining the risk to finance the cost of natural disasters. Provisions of the DPCL 2013 and Decree 94 do not specifically allow risk transfer, but neither do they prohibit it. Allowing the funds to access risk transfer instruments would address the closed and limited funding of the DPCFs and help alleviate funding constraints, particularly for severe impact events.

72. The DPCL 2013 and Decree 94/2014/ND-CP do not specify that the DPCFs can place funds in a commercial bank account or pursue any investment strategy. Rather, funds are allowed only in provincial state treasury accounts that yield no interest. A common belief among the local DRM authorities who managed the funds was that allowing even responsible and conservative investment in pursuit of funds growth (such as through bank deposits) might go against the funds' nonprofit mandate and generate some risks. However, cash sitting in a zero-interest-rate treasury account in anticipation of a disaster entails some significant opportunity costs, which in any case may equal commercial banks' deposit rates at the minimum.

73. Under the DPCL 2013 and Decree 94/2014/ND-CP, the DPCFs can finance both disaster prevention and post-disaster response and recovery, with special attention to emergency relief and medium-term recovery. In practice, most provinces finance all disaster prevention and recovery activities without a clear rationale for allocation or for separation of subaccounts into prevention versus post-disaster financing.

Sources and Collection of Contributions

74. As of October 2017, 43 out of 56 provinces had collected contributions with total cumulative revenue of VND 952.6 billion. Thirteen provinces had established the DPCFs but had not collected contributions. Under the requirements of Decree 94/2014/ND-CP, the revenue of all DPCFs is estimated in the range of VND 4,000–5,000 billion a year.[14]

75. Contributions as stipulated by the DPCL 2013 and Decree 94/2014/ND-CP are compulsory; related enforcement measures, such as penalties or fines, are provided for in Decree 104/2017/ND-CP. Although contributions are mandatory, they are not treated as fees or charges and are therefore not regulated by the 2015 Law on Fees and Charges. Questions have been raised by some contributors about the legitimacy of the required contribution for public delivery of DRM services as compared to public tax obligations and delivery of the same service through state budget.

76. It is not clear what methodology the government used to calculate and impose the current levels of contribution for individuals and entities. The DPCF contributions for enterprises are 20 times higher than for the old Fund for Flood and Storm Prevention and Control; for individuals they are around two to five times as high. Contributors in many provinces raised concern over these as additional burdens to existing taxes, fees, and charges.

14 Based on an estimation of 500,000 enterprises contributing VND 5 million each, a workforce of 20 million contributing VND 100,000 a person, and other individuals contributing VND 15,000 each.

Box 2.3. **Disaster Prevention and Control Funds' Collection of Contributions Nationwide**

1. **Collection by year:**
   - 2017: VND 233.5 billion (est.)
   - 2016: VND 451.4 billion
   - 2015: VND 267.6 billion
2. **Eligibility for contributions:**
   Individuals:
   - Civil servants and government sector staff: one day's salary/person/year by basic salary after tax and insurance deductions
   - Enterprise employees: one day's salary/person/year by regional minimum wage
   - Other workers: VND15,000/person/year

   Enterprises:
   - 0.0002 of total assets, but not exceeding VND 100 million
   - Contribution allowed to be booked as taxable income

77. An issue raised by contributors with provincial authorities concerns the relationship between contributions and entitlements. The DPCL 2013 and Decree 94/2014/ND-CP provide for broad and generic coverage of beneficiaries but do not specify the level of benefits they are entitled to. The poor, the vulnerable, farming households/cooperatives, and some SOEs are clearly supported, but how other individuals, households, and private businesses are treated remains ambiguous. Under the auspices of promoting private sector development and entrepreneurship, the government may want to dedicate part of this fund to protect private households and businesses that are not covered under a traditional budget domain.

78. Another issue of concern to contributors was equity and fairness in contribution—i.e., why levels of contributions are different across sectors. Contributors were also concerned that the lack of clarity in related regulations (Decree 94, Article 8.1-8.3) could result in a double contribution (for individuals required to contribute both at their workplace and their home area). There was also concern about double or even triple contributions for someone holding a permanent resident permit in one province, living temporarily in another province, and working at a state-owned entity. Guidance on avoiding multiple contributions is lacking.

79. The formula for calculating the base contribution by individuals—involving salary base and working days—was not always clear-cut. The formula for enterprises was also problematic, since it is not clear at which point in time the asset base should be used for calculation. It is permissible to book enterprises' contributions as taxable income, but there is little guidance from the authorities on how enterprises can treat these contributions as taxable income, or on whether the same individual contributions can be treated the same way. In addition, although contributions are not considered as fees or charges, there is no guidance on how to document these payments as evidence of contribution and for financial record keeping.

80. Collection of enterprises' contributions is mandated through the DPCFs' management bodies; these bodies have voiced concern, however, over (i) their ability to access information on

enterprises, particularly on their assets, (ii) their ability to enforce collection from enterprises, and (iii) operational capacity constraints. Collection of individual contributions is delegated to commune people's committees. For civil servants, staff and workers in government-related agencies, and members of the armed forces, responsibility for collection rests with heads of those entities. Local authorities voiced concern that there is no guidance on how to supervise contribution collection or on how to confirm that funds were collected fully and accurately.

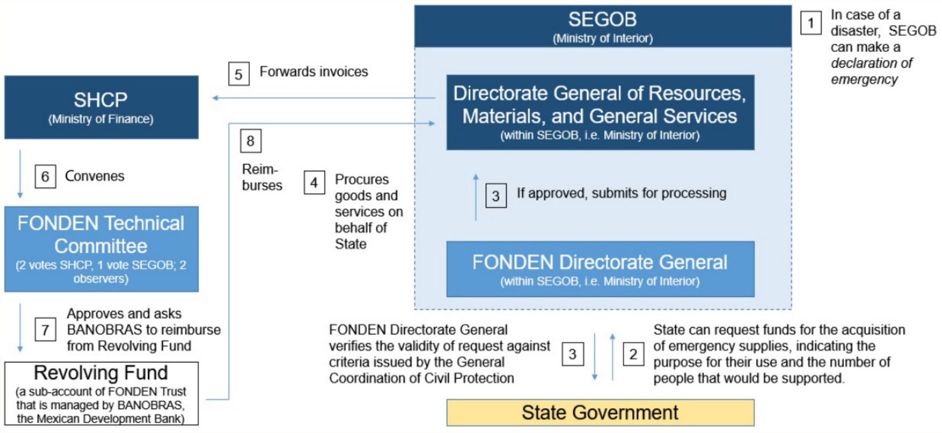
Post-disaster Use of Funds and Funds Disbursement/Execution

81. Decree 94, Article 9 provides for expenditure under the category of support to disaster prevention and control as stipulated in Article 10 of the DPCL 2013. As shown in table 2.3, expenditure allowed under Decree 94 and DPCL 2013 seems to overlap with expenditure under contingent budget. Neither the DPCL 2013 nor Decree 94 addresses this overlap. Since the scope of activities under the DPCFs is broad, there is a need for detailed guidance on eligibility of expenditure to ensure that the funds are properly spent and meet objectives. The government may also want to review the expenditures currently allowed under Decree 94, along with eligibility and thresholds for these expenditures.

82. Decree 94/2014/ND-CP does not provide a process by which funds can be mobilized by fund managers or accessed by beneficiaries in the aftermath of a natural disaster. Instead, the decree gives the chair of the PPC power to decide—ad hoc—on the size of funding, scope of funded support, and beneficiaries supported, based on the proposal of the provincial Steering Committee for Disaster Prevention and Control (SCDPC). A formal process for mobilizing and accessing funds has been codified and institutionalized for financing from budget instruments. The absence of such a process may hinder the timeliness and efficiency of post-disaster relief and recovery and may be one of the reasons why even some disaster-prone provinces have not used much of their DPCF funds for post-disaster support. Figure 2.3 presents relevant experience from Mexico on the expenditure process for disaster relief.

83. It is not clear what damage assessment process will have to be applied, and what evidence submitted, in order to access the DPCFs. Most provinces currently adopt the process in Circular 43/TTLT/NNPTNT-KHDT, although that is mostly used for rapid assessment of economic loss/damage. Moreover, questions remain regarding the methodology for calculation of losses in financial terms, calculation of the government's share of the losses, and accuracy of the calculations, since the process is still partially manual and does not draw much on evidence-based methods or technology. Damage assessment processes for financial support from central budget are also in place, such as those provided for under Decree 02/2017/ND-CP on agriculture support and Decree 136/2013/ND-CP on social assistance. These processes are not applied for the DPFCs, however.

Figure 2.3. **FONDEN's Expenditure Process for Disaster Relief**



Source: World Bank 2012.

84. Decree 94 allows for expenditure for collection from individuals at communal level. The expense is set at less than 5 percent of total annual actual collection in the commune. However, the regulation does not allow expenditure for collection from other contributors, such as entities and businesses, causing many provinces to be concerned with the funds' sustainability.

85. Decree 94/2014/ND-CP does not allow expenses for the DPCFs' operation and administration, as a result of which most of the DPCFs are still not fully operational. While the DPCL 2013 does not allow budget transfer to the DPCFs, the funds in effect are still financed by recurrent budget expenditure allocated to the DARDs or the provincial SCDPC; this is because except in Dong Nai Province, all staff members of the DPCFs hold concurrent positions in the DARD and/or provincial SCDPC and are officially on the payroll of one of those entities. This arrangement seems to offer some savings in staffing and administrative expenses, but seriously threatens the sustainability of the funds, because the staffs are not dedicated and do not have the financial management expertise required. In practice, some provinces have used the fund itself to finance operational costs, while others have allocated their budget, which poses some risk of breaching the SBL 2015 and DPCL 2013.

86. Under Article 9 of Decree 94/2014/ND-CP, the Prime Minister has the power to transfer the funds' balance to support other provinces severely affected by natural disasters. However, the possibility that their reserves may be transferred to others leaves provinces with little incentive to build up their reserves. In effect, few provinces have volunteered to transfer their funds to others even in times of needs. Even when transfer is "forced," there is little clarity about what balance is needed for transfer and about what the mechanism for transfer will be.

87. While providing that the provincial SCDPC is responsible for damage and needs assessment and reporting to the PPC chair for decision making, Decree 94 does not clearly provide which agencies aid the PPC in appraising the support needed, or how they are involved. In practice, the provincial SCDPC

in four visited provinces consulted the Department of Finance on funding support before submitting a report to the PPC.

Post-disaster Support Delivery

88. There is clearly an absence of guidance on how support should be delivered and by whom. In effect, DPCFs in some provinces provide these relief and recovery services directly. This approach may not be sustainable and cannot be scaled up for high-severity events because of DPCFs' resource constraints. It may also cause inefficiencies and waste in response because it potentially overlaps with the system for delivering disaster-related social assistance and agriculture support.

89. Existing post-disaster benefits are often delivered in the form of cash and in-kind support. Cash-based support is still the preference of both service delivery agencies and beneficiaries, for several reasons: the small amount of benefits, constrained access to bank accounts, and the traditional cash-based delivery process.

Financial Management

90. There is still a gap in existing regulations as to what type of entity DPCFs are as established, and hence which accounting regime and financial reporting standards they should adopt. Moreover, Decree 94 does not provide whether the DPCF financial statements will be audited, or by whom.

91. Several provinces under review such as Vinh Long have applied the accounting standards for public service units. Many other provinces have not adopted any accounting standards. In addition, most provinces that have already used the funds submitted their financial statements for approval by the PPC. Neither the central government nor the PPC has issued instructions on order of priority and coordination among functional departments (such as the Department of Finance, DARD, and the state audit agency) for reviewing the financial statements before submission to the PPC.

92. While 26 other nonbudgetary public funds in Vietnam have their own regulations on financial management with guidance from the Ministry of Finance,[15] no guidelines on financial management have been developed for the DPCFs. Under the SBL 2015 and its Decree 163/2016/ND-CP, such guidance and operations should have been in place since the establishment of the funds.

Supervision

93. Decree 94, Article 14.1 provides that the PPC is responsible for inspection and supervision of the funds' operations. However, the decree does not provide detailed guidance on supervisory frameworks, institutional arrangements, or mechanisms for supervision of the funds.

94. Article 14.1 also provides for disclosure of the funds' revenue and expenditure, along with their financial statements, for different stakeholders at different levels using various means of communication. This is important to ensure public confidence in the funds.

15 For example, Circular 85/2012/TT-BTC provides guidance on the financial management regime for forest protection and development, and Circular 92/2013/TT-BTC provides guidance on the financial management regime for protection of Vietnamese citizens and entities overseas.

Human Resource Management

95. Decree 94/2014/ND-CP also provides that the PPC chair will appoint the fund director, though it does not offer any guidance on how or on what basis this selection should be made, or on how the director's performance should be judged. This lack of guidance also applies to selection of staff for the funds. The government may therefore want to provide further guidelines on selection of the fund's senior management and staffing.

96. Many DPCFs requested staffing for funds management, but this was by law impossible because no expense is allowed. Several provinces have in fact hired staff for the DPCFs, but this may have been a breach of the law and Decree 94. Given the government's determination to refine its civil service through reduction in the workforce staffing, it is unclear going forward whether such a request for staffing would be accommodated across 63 provinces.

CHAPTER 3

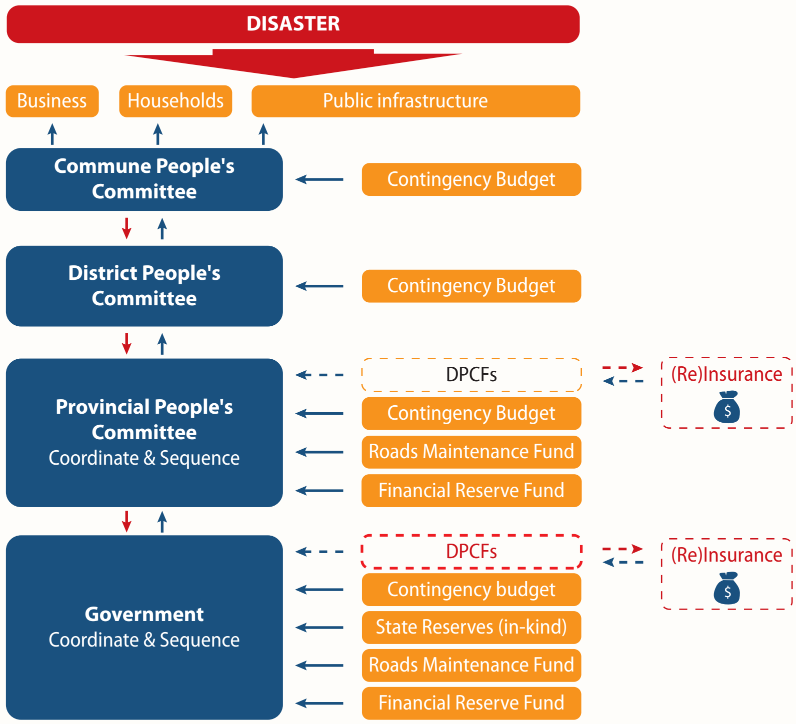
OPTIONS FOR IMPROVEMENT OF THE FUNDS FOR NATURAL DISASTER PREVENTION AND CONTROL IN VIETNAM

97. Over four years after coming into effect, the DPCL 2013 and Decree 94/2014/ND-CP have laid a foundation for the DPCFs as an important risk financing instrument to strengthen the country's financial resilience. However, implementation of the laws has revealed many challenges that may have prevented the DPCFs from being fully operational. Moving forward, the government may want to consider options to improve the DPCFs as part of the country's overall strategy to strengthen financial resilience against natural disasters.

3.1. Policy, Legal, and Institutional Arrangements

98. The government may want to better articulate the DPCFs' goals and rationalize the funds' position in the country's broader disaster risk financing framework. One of the options for strategically positioning the funds is presented in figure 3.1 below. Under this option, the funds could be (i) established at the central and provincial levels (or lower levels), (ii) integrated into existing arrangements for disaster risk finance instruments by acting as the first line of defense exclusively for disasters, and (iii) protected against severeimpact events through a window for insurance/reinsurance or other risk transfer instrument. This arrangement would in effect provide two layers of protection for the state budget. In addition, the DPCFs could become a good platform for scaling up social protection programs through expanded coverage to other beneficiaries. The establishment of the funds at two levels would help pool the resources for economy of scale; however, the government may want to establish a disbursement and execution process to ensure that DPCF funding flows quickly and efficiently, where and when it is needed most.

Figure 3.1. **Options for Structuring the DPCFs as Part of a Comprehensive Disaster Risk Financing Framework in Vietnam**



Note: Dotted red outline indicates instrument or activity that is recommended for introduction into the existing system.

99. The government could also clearly define and prioritize the beneficiaries and scope of activities under the DPCFs as part of the country's overall arrangement of disaster risk financing instruments, taking into account the DPCFs' resources. Clarification of the mandate would help the authorities address the public's concern about the legitimacy of the DPCFs, as well as their questions about why contributions to the funds are required in parallel with all other taxes, fees, and charges, and about what their entitlements are in light of these contributions. The government may also want to articulate the guiding principles under which the DPCFs will operate; these could include ownership, responsiveness, equity, sustainability, accountability, and transparency.

100. A well-defined and well-coordinated mechanism and process could be established that specified funding sources and that channeled funding to avoid overlap with the state budget and other funds for timely and efficient delivery of support. These should be codified and aligned consistently across various sets of laws and regulations.

101. Institutional frameworks for the funds could be developed to engage relevant stakeholders at both central and local levels and to define their responsibilities; doing so would help ensure seamless coordination throughout the life cycle of the funds. The DPCL 2013 and Decree 94 could be revised to

reflect the roles of various stakeholders involved, particularly the financial and DRM authorities, and to indicate how these agencies should coordinate (both vertically and horizontally) in governance and operational management of the funds. The MoF and departments of finance have an important role in the management of the DPCFs, given their location at the nexus of various policy areas and role in managing and supervising key financial resources for DRM.

102. The private sector also has a potential role in helping the DPCFs access vast risk management expertise and analytical capabilities and transfer some of the risks to the insurance and capital markets through public-private partnerships.

3.2. Operational Arrangements

Governance Structure

103. The DPCFs' governance could be structured to ensure (i) clear delineation of responsibilities among stakeholders, (ii) fast and evidence-based decision-making processes, (iii) efficient and timely execution of resources, (iv) inclusion of a wider spectrum of stakeholders to facilitate accountability, discipline, and transparency across institutions, including ministries and nongovernment actors, and (v) lean operations and cost-efficiency.

104. The government may want to consider setting up the structure in a way that distinguishes the governing function and execution function:

- The governing function has overall strategic responsibility for the funds and involves a broad range of specific responsibilities, which include definition of overall objectives, funding, risk tolerance, adherence to applicable regulations, risk financing strategy, and administration. This function can be set up in the form of a governing board or council, headed at the provincial level by the PPC chair and at the central level by the prime minister or a delegated person who can coordinate disaster risk financing instruments.
- The executive function puts the governing body's strategy and decisions into action and requires resources and expertise in both DRM and finance. DRM authorities could be in charge of technical functions while financial authorities such as the department of finance or ministry of finance could take the lead in making sure the DPCFs are well funded for their liabilities and look after their fiduciary duties.

Financial Risk Assessment

105. Province-wide financial risk assessment against natural disasters could be enforced as part of developing each province's overarching disaster risk finance strategy, under which the DPCFs are an integral component. This step would help quantify and layer the risks that the provincial governments are liable for, and help them match available assets and risk financing instruments, including the DPCFs, to the layered risks. Given a relatively good historical data set at the provincial level, the government at a minimum could institutionalize risk analytics to inform the development of the provincial disaster risk finance strategy. Using a probabilistic catastrophe risk model should be encouraged for financial

risk assessment, as such a model can help estimate the impacts of disaster losses for which there is no historical precedent.

106. Revisions to current regulations on damage assessment for post-disaster financing, including Circular 43/2013/TTLT on damage assessment and Decree 94, could be considered with the goal of creating a consistent and efficient approach to and methodology for damage assessment across the various financing instruments, most notably the DPCFs and state budget.

107. A digital-based system for damage assessment and reporting could be set up to replace the current time-consuming manual system. This would accelerate the process of collecting damage data and evidence needed for claiming relief and recovery funds in the wake of a disaster. The system could also leverage advances in technology to make the best risk information accessible to governments.

DPCF Funding Strategy

108. A financing strategy could be developed for the DPCFs to help the authorities systemize, optimize, and execute the funds' resources in a timely and cost-efficient manner to meet their liabilities. Such a strategy could also help the authorities to plan ahead and earmark resources needed for preparedness, prevention, and post-disaster financing and could be combined with responsible and prudent asset management.

109. The government may want to consider revising Article 10 of the DPCL 2013 to enable transfer from state budget to the DPCFs on the condition that there is no overlap with state budget on scope of revenue collection and activities. Experience from countries that have deployed such dedicated DRM funds shows that having some budget transfer, even a minimum amount, could contribute toward financial sustainability.

110. Both the DPCL 2013 and Decree 94/2014/ND-CP could be revised to allow the use of innovative risk transfer instruments such as insurance to help the DPCFs access (re)insurance and capital markets for funding in case of large-scale events. Relying solely on risk-retention instruments like contributions and state budgets may put the DPCFs and government budget under stress if a severe disaster happens. The government could consider allowing central and provincial funds to insure their portfolio with the (re)insurance markets in part or in whole to provide a quick liquidity injection or recovery funds following a disaster. The central fund could provide support to needy, disaster-stricken provinces through (i) purchasing disaster insurance or giving premium subsidies to those that still rely on central budget transfers or have less than 50 percent of revenue transferred to the central budget, and (ii) its own funds, which can be accumulated over the years. Provinces that transfer more than 50 percent of revenue to the central budget could purchase disaster insurance on their own and use the same mechanism to transfer funds to lower districts and communes in need. This mechanism would have to be coordinated with support from the state budget and could serve as a significant buffer for the state budget.

Contribution and Mobilization

111. The government may want to revisit the levels of contribution made under Decree 94/2014/ND-CP, given the public's concern that these levels are significantly higher than those under the predecessor fund (Fund for Flood and Storm Control) under Decree 50/CP. A clearly defined

framework for liabilities combined with further study and a risk-based methodology could help the authorities arrive at appropriate levels of contributions for individuals and entities/businesses.

112. The DPCL 2013 and Decree 94/2014/ND-CP could be revised to ensure equity across contributors and to balance rights with obligations. The decree could provide clearly defined eligibility for contributions as well as more detailed guidance on how to avoid double or triple contributions. As was done in the past with the Funds for Flood and Storm Prevention and Control, the decree could be revised to equalize the contributions from individuals across sectors.

113. The government could consider revising the decree to outsource contribution collection to a specialized collection authority such as the tax department or social security agency. This would be especially helpful for collection from enterprises, given the limited enforcement power over businesses that the DPCF managers possess. In addition, the decree also needs to clearly provide a mechanism for oversight of contribution collection. More guidance is also needed on how to treat contributions as taxable income for both enterprises and individuals and produce financial records of these contributions.

Use of Funds and Funds Disbursement/Execution in the Aftermath of a Natural Disaster

114. As the DPCFs are used as a holistic disaster financing mechanism—that is, for preparedness, prevention, and post-disaster relief and recovery—the authorities may want to develop a clear resource allocation process for these activities and provide dedicated subaccounts to ensure that certain resource allocations are maintained for specific purposes.

115. As an off-budget vehicle exclusively dedicated to DRM, the funds' responsiveness could be significantly enhanced by establishing procedures for quick disbursement following a disaster. However, this step would require a governance structure and appropriate controls and oversight to maintain sound financial management practices.

116. Decree 94/2014/ND-CP could be revised to define clear payout criteria and to pre-define use of funds. Clear definitions of payout and use of funds would help avoid depletion and misallocation of funds and allow the funds to flow quickly to the intended beneficiaries. Decree 94 could also provide detailed guidance to help provincial authorities develop a standard operations manual for use of funds over all steps, from receiving contributions and other funding sources, such as budget or insurance recoverable, to disbursing support to the final beneficiaries. The authorities could pre-define the type, size, and timing of expenses, as well as the conditions that would trigger payouts. Delegation or devolution of approval authority linked to these pre-defined payout could be considered to ensure a fast and efficient funding process.

117. Decree 94/2014/ND-CP could also be revised to provide detailed guidance on how post-disaster support will be delivered. Given the delivery system already in place, i.e., the disaster-linked social assistance and agricultural support networks, the government might want to utilize this network for the DPCFs in coordination with support from the state budget. If the DPCFs could be used for other targeted beneficiaries that are not covered by the state budget, this would save some operational cost and help the provinces scale up their social protection programs. In this regard, pre-planned flows of funds should be linked to these pre-agreed channels for delivering benefits, such as the social assistance delivery system or any contingent contract for emergency relief or recovery.

118. The government might want to transform existing post-disaster benefit delivery from a cash basis to a digital basis using the latest payment instruments. This would significantly accelerate the delivery process as well as promote discipline and transparency.

119. As operational expense is one of the key constraints that has prevented the DPCFs from being fully operational, the government could consider the following options:

- Adopt the same model as that of the Funds for Flood and Storm Prevention and Control. This model involved no operational fees, as the funds' execution and management functions were integrated into the Department of Finance, which managed both budget and off-budget funds for disaster prevention and control at the same time. This option offers some advantages because it allows funds to be directly managed by the financial authorities with the necessary expertise and ability to coordinate the overall financing agenda. However, a separate set of rules and procedures for DPCF fund flows should be put in place to enable fast-track disbursement.
- Revise Decree 94/2014/ND-CP to allow for some operational expenses for the DPCFs. These might come from investment income of the funds' balance or directly from contributions, depending on the structure of the execution function, which should be lean and light to keep operating costs to the minimum.

120. If the government decided to outsource the collection of enterprises' contributions to a specialized collection authority, Decree 94 should also allow a certain percentage to be paid to the collectors.

Funds Equalization Transfer among Provinces

121. To facilitate the fund transfer to provinces in need, the government could consider revision to DPCL 2013 to allow the establishment of the DPCF at the central and provincial level; this would enable a mechanism for funds allocation and transfer. Under this option, a certain percentage of collection could be transferred to the central fund and the rest retained at the district and provincial level. Higher-level funds could act as a transfer agent for lower-level funds that experience severe events and need cash support. See figure 3.1.

Financial Management

122. Decree 94 could be revised to provide more guidance on the DPCFs' financial management, including accounting, financial reporting, and auditing. The Ministry of Finance could issue more detailed guidelines on financial management of the funds under a circular. The regulations could also specify the responsibilities of relevant agencies, such as the financial authorities, line technical agencies, and audit authority.

123. The central and local authorities could consider developing a streamlined, web-based financial reporting system to ensure that the higher-level authorities are up-to-date on lower-level funds' positions and can provide support in a timely manner. Such a system can also promote further transparency in financial management.

Oversight

124. Revisions could be made to Decree 94 to provide more guidance on the mechanism for inspection and supervision of the funds, including institutional roles and responsibilities.

125. A summary of recommended options for improving the DPCFs is presented in table 3.1.

Table 3.1. **Recommended Options for Improving the DPCFs**

Area	Recommendation	Key regulations	Responsible institution	Time frame
1. Policy and legal mandate	• Clarify DPCFs' policy and legal mandates, including targeted beneficiaries, scope of activities, and key principles guiding operations	Decree 94, DPCL 2013	MARD, MoF	MT
2. Funding coordination mechanism	• Establish coordination mechanisms for DPCFs and other sources of funding; establish funds delivery channel at central and local levels	Decree 94, Decision 01/2017/QD-TTg	MoF, MARD	ST
3. Institutional frameworks	• Establish roles and responsibilities of institutions involved in the DPCFs	Decree 94, DPCL 2013	MARD, MoF	MT
4. Fund structure	• Establish guidance on governance structure for DPCFs • Establish equalization transfer structure	Decree 94, DPCL 2013	MARD, MoF	MT
5. Risk and damage assessment	• Institutionalize risk assessment at all levels • Provide consistent methodology and unit cost/norm for financial assessment of damage/loss, including clarification of government's liabilities • Allow the deployment of technology to transform the data collection process for financing from DPCFs	Decree 94, Circular 43/2014	MARD, MoF, MPI	ST
6. Financing strategy	• Allow transfer from state budget • Allow insurance and other risk transfer instruments • Allow prudent asset management linked to the DPCFs' liabilities	DPCL 2013, Decree 94,	MARD, MoF	MT
7. Contributions	• Revisit level of contribution • Revise eligibility for contribution • Outsource collection	DPCL 2013, Decree 94	MoF, MARD	MT
8. Use of funds	• Clearly define payout criteria and predefine use of funds • Establish process for use of funds through a standard operation manual • Link the fund flows to a delivery network • Switch from cash payment to digital payment	Decree 94, new circular	MoF, MARD	ST
9. Financial management	• Provide guidance on accounting, financial reporting, and auditing	Decree 94, new circular	MoF, MARD	ST
10. Oversight	• Provide guidance on inspection and supervision	Decree 94, new circular	MoF, MARD	ST

ANNEX 1. SUMMARY OF PROVINCIAL FUNDS FOR DISASTER PREVENTION AND CONTROL

(Updated 10/10/2017)

	Province	DPCF established	Funds collection (VND million)				Funds expenditure (VND million)	Agency housing DPCFs	Staffing	Funds director	Fund management council established
			Total	2015	2016	2017					
1	Hà Giang	x	6,046	221	5,132	693	4,019	DARD	Concurrent	Director of DARD	
2	Lào Cai	x	15,369		13,002	2,367	14,275	DARD	Concurrent	Deputy Director of DARD	x
3	Lai Châu		0								
4	Điện Biên		0								
5	Lạng Sơn	x	11,739	7,207	3,812	720	3,133	DARD	Concurrent	Director of DARD	
6	Cao Bằng	x	0								
7	Sơn La	x	7,200	7,200				DARD	Concurrent	Director of DARD	
8	Yên Bái	x	0					Irrigation branch	Concurrent	Deputy Director of DARD	x
9	Tuyên Quang	x	4,615		1,537	3,078	144	DARD	Concurrent	Director of DARD	
10	Thái Nguyên	x	5,743	513				OP SCDPC	Concurrent	Chief of OP SCDPC	x
11	Bắc Kạn	x	4,618			4,618		OP SCDPC	Concurrent	Chief of OP SCDPC	x
12	Hòa Bình	x	22,847	8,500	7,747	6,600	16,230	ISFPCB	Concurrent	Head of Branch	x
13	Hà Nội	x	0					ISFPCB	Concurrent	Head of Branch	
14	Phú Thọ	x	25,125	10,647	10,969	3,509	19,510	ISFPCB	Concurrent	Head of Branch	
15	Vĩnh Phúc	x	4,502		2,910	1,592		Irrigation branch	Concurrent	Head of Branch	
16	Bắc Giang	x	11,597	1,273	7,384	2,940		DARD	Concurrent	Deputy Director of DARD	x
17	Bắc Ninh	x	13,315	2,441	6,753	4,121	3,604	DARD	Concurrent	Director of DARD	
18	Hải Dương	x	9,775		9,775			DARD	Concurrent	PPC vice chairman	
19	Hưng Yên	x	4,300		4,300			DARD	Concurrent	Director of DARD	
20	Quảng Ninh	x	33,029	9,064	16,192	7,773	18,269	DARD	Concurrent	Director of DARD	
21	Hải Phòng	x	13,608		7,738	5,870	233	OP SCDPC	Concurrent	Director of DARD	x

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	Province	DPCF established	Funds collection (VND million)				Funds expenditure (VND million)	Agency housing DPCFs	Staffing	Funds director	Fund management council established
			Total	2015	2016	2017					
22	Hà Nam	x	0					DARD	Concurrent	Director of DARD	
23	Nam Định	x	13,132	153	9,299	3,680	2,033	DARD	Concurrent	Director of DARD	
24	Thái Bình	x	42,534	14,692	15,897	11,945		DARD	Concurrent	Director of DARD	
25	Ninh Bình	x	0					DARD	Concurrent	PPC vice chairman	x
26	Thanh Hóa	x	29,079	20,887	8,192	1972		Forest Protection and Develop-ment Fund			x
27	Nghệ An	x	20,103	10,708	9,395			Dykes and Floods & Storms Prevention Control Branch	Concurrent	Head of Branch	
28	Hà Tĩnh	x	13,135	6,263	5,859	1,013	1,091	OP SCDPC	Concurrent	Chief of OP SCDPC	
29	Quảng Bình		0								
30	Quảng Trị	x	0								
31	T.T.Huế		0								
32	Đà Nẵng	x	20,550		12,568	7,982	9,500	DARD	Concurrent	Deputy Director of DARD	
33	Quảng Nam	x	9,231		5,092	4,139	4,000	DARD	Concurrent	Director of DARD	
34	Quảng Ngãi	x	0							Director of DARD	
35	Bình Định	x	0							PPC Vice Chairman	x
36	Phú Yên	x	0							Deputy Director of DARD	
37	Khánh Hoà	x	13,995		7,536	6,459	77	DARD	Concurrent	Director of DARD	
38	Ninh Thuận	x	0								
39	Kom Tum	x	2,219		200	2,019		OP SCDPC	Concurrent	Chief of OP SCDPC	
40	Gia Lai	x	5,210		5010	200		DARD	Concurrent	Director of DARD	
41	Đắk Lắk	x	31,666	10,926	13,674	7,066	19,480	DARD	Concurrent	Deputy Director of DARD	
42	Đắk Nông	x	6,042	2,060	3,005	977	4,283	Irrigation branch	Concurrent	Head of Branch	
43	Bình Thuận	x	4,908	1,062	1,421	2,425	1,698	DARD	Concurrent	Director of DARD	
44	Lâm Đồng	x	0					DARD	Concurrent	Director of DARD	
45	BR-Vũng Tàu	x	12,302	3,095	2,939	6,268	9,510	DARD	Concurrent	Director of DARD	

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	Province	DPCF established	Funds collection (VND million)				Funds expenditure (VND million)	Agency housing DPCFs	Staffing	Funds director	Fund management council established
			Total	2015	2016	2017					
46	TP. Hồ Chí Minh	x	277,611	117,626	117,985	42,000	135,675	OP SCDPC	Concurrent	Chief of OP SCDPC	
47	Tiền Giang		0					OP SCDPC	Concurrent	Chief of OP SCDPC	
48	Bến Tre	x	0					DARD	Concurrent	PPC Vice Chairman	
49	Trà Vinh	x	17,993	4,749	7,381	5,863	6,361	DARD	Concurrent	Director of DARD	
50	Sóc Trăng	x	0							Director of DARD	
51	Bạc Liêu		0								
52	Cà Mau	x	2,438			2,438		DARD	Concurrent	Director of DARD	
53	Kiên Giang	x	11,869	3,138	4,982	3,749	7,222	DARD	Concurrent	Director of DARD	
54	Long An	x	0					DARD	Concurrent	Director of DARD	
55	Đồng Tháp	x	13,295		8,248	5,047	9,841	OP SCDPC	Concurrent	Chief of OP SCDPC	
56	Vĩnh Long	x	26,174	7,346	8,437	10,391	24,826	DARD	Concurrent	PPC Vice Chairman	
57	An Giang	x	10,663		3,733	6,930	1,368	DARD	Concurrent	Director of DARD	
58	Hậu Giang	x	8,230	1,135	4,655	2,440	580	DARD	Concurrent	Director of DARD	
59	Đồng Nai	x	54,200		25,200	29,000	25,000	DARD	Dedicated	Head of Division, DARD	
60	Bình Dương	x	78,855	29,118	35,792	13,945	37,579	DARD	Concurrent	Director of DARD	
61	Bình Phước	x	15,443	3,019	9,258	3,166	6,418	Irrigation branch	Concurrent	Head of Branch	
62	Tây Ninh	x	10,227		9,639	588	2,103	DARD	Concurrent	Director of DARD	
63	Cần Thơ	x	8,100	5,505	1,523	1,072	5,520			Director of DARD	
Total		**56**	**952,632**	**267,661**	**451,407**	**233,564**	**396,134**				**10**

Source: Based on government sources.

Note: OP SCDPC = Office of Provincial SCDPC and Rescue; ISFPCB = Irrigation and Storms & Floods Prevention and Control Branch.

REFERENCES

World Bank. 2010. *Weathering the Storm: Options for Disaster Risk Financing in Vietnam.* Washington, DC: World Bank. http://documents.worldbank.org/curated/en/569191468108554653/Vietnam-Weathering-the-storm-options-for-disaster-risk-financing-in-Vietnam.

———. 2012. Technical Appendices. Vol. 2 of ASEAN: *Advancing Disaster Risk Financing and Insurance in ASEAN Member States: Framework and Options for Implementation.* Washington, DC: World Bank.

———. 2017. "Climate Change Knowledge Portal" [Vietnam dashboard]. http://sdwebx.worldbank.org/climateportal/.

———. 2017. *Vietnam Catastrophe Risk Assessment Summary Report.* World Bank: Washington, DC.