

VIETNAM

HEALTH SECURITY FINANCING ASSESSMENT



VIETNAM

HEALTH SECURITY FINANCING ASSESSMENT



© 2019 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Rights and Permissions

The material in this work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

Please cite the work as follows: World Bank. 2019. Vietnam: Health Security Financing Assessment. Washington, DC: World Bank.

Cover photo: Photos by Talulla / Shutterstock.com and Motortion Films / Shutterstock.com
Cover design: Circle Graphics, Inc.

CONTENTS

| | |
|--|-----|
| ACKNOWLEDGMENTS | v |
| LIST OF ABBREVIATIONS | vi |
| EXECUTIVE SUMMARY | 1 |
| | |
| section one. INTRODUCTION | 5 |
| Background on Health Security Financing Assessment | 7 |
| Vietnam's Health Security Context | 9 |
| Objectives and Organization of the Report | 12 |
| | |
| section two. METHODOLOGY AND DATA COLLECTION | 15 |
| Methodology | 17 |
| Data Collections | 19 |
| Limitations and Challenges | 21 |
| | |
| section three. RESULTS | 23 |
| Health Security Activities in Vietnam | 24 |
| Structure, Organization, and Multidisciplinary Coordination | 34 |
| Health Security Financing Sources and Budget Allocation Processes | 42 |
| Expenditures on Health Security Activities | 53 |
| Efficiency and Sustainability of Financing for Health Security | |
| | |
| section four. CONCLUSIONS AND RECOMMENDATIONS | 61 |
| | |
| annex 1. VIETNAM: A CASE STUDY ON FINANCING THE RESPONSE TO H5N1 OUTBREAKS, 2003–06 | 67 |
| | |
| annex 2. HEALTH SECURITY FINANCING ASSESSMENT TOOL | 85 |
| | |
| DEFINITIONS | 102 |
| | |
| REFERENCES | 104 |

LIST OF TABLES

| | | |
|-----------|---|----|
| Table 1: | Vietnam's JEE Score in Comparison with Global and Income Group Averages | 10 |
| Table 2: | Number of Legal Documents by 19 JEE Technical Areas | 25 |
| Table 3: | Key Actors in Health Security, Central Level | 34 |
| Table 4: | Key Actors in Health Security, Provincial Level | 36 |
| Table 5: | Development Partners Participation in Health Security Activities, 2016 | 38 |
| Table 6: | Selected Macroeconomic Indicators, 2016 | 53 |
| Table A1: | Central Contingency Fund Released to MARD, Billion VND | 76 |
| Table A2: | Supplementary Budget by Ministries, Billion VND | 77 |
| Table A3: | Budget Estimate by Key Components in US\$, 2006–10 | 82 |

LIST OF FIGURES

| | | |
|------------|---|----|
| Figure 1: | Metabiota Epidemic Preparedness Index by Income Group—188 Countries | 10 |
| Figure 2: | Multilateral Financing Framework for Avian Influenza Prevention and Control | 46 |
| Figure 3: | Annual Planning and Budgeting Processes | 49 |
| Figure 4: | Total Health Security Expenditure in Billion VND, 2016 | 54 |
| Figure 5: | Financial Sources for Health Security at All Levels, 2016 | 54 |
| Figure 6: | Health Security Expenditures by Implementing Ministries, 2016 | 55 |
| Figure 7: | Financial Sources for Health Security by Ministry, 2016 | 56 |
| Figure 8: | Health Security Expenditure by the EE Pillars, 2016 | 57 |
| Figure 9: | Health Security Expenditures by JEE 19 Technical Areas, 2016 | 57 |
| Figure 10: | Health Security Expenditure by Province, 2016 | 58 |
| Figure 11: | Per Capita Health Security Expenditure and Provincial GDP Per Capita, 2016 | 59 |
| Figure 12: | Health Security Expenditure by Self- vs. Non-Self-Financed Provinces, 2016 | 59 |
| Figure A1: | Spatial Distribution of Avian Influenza, 2003–06 | 69 |
| Figure A2: | Coordination Framework at the Central Level | 72 |
| Figure A3: | Comparison of Financing Sources for Avian Influenza, 2004–05 and 2006–10 | 78 |



ACKNOWLEDGMENTS

This is a joint report produced by a World Bank team, the Vietnam national health security task force, and the Health Strategy and Policy Institute (HSPI) with funding from the Australian Department of Foreign Affairs and Trade (DFAT). The World Bank team deeply appreciates and would like to thank individuals, ministries, and departments who took the time to provide their knowledge, experience, and advice at various stages of the exercise. Those contributions were instrumental in guiding the team and ultimately enhanced the quality of the report.

The World Bank team tasked with preparing this report is co-led by Netsanet W. Workie and Anh Thuy Nguyen, and included (in alphabetical order, by last name), Jewelwayne Salcedo Cain, Loredana Luisa Horezeanu Sutayut Osornprasop, and Huong Thi Lan Tran. The task force, headed by Dr. Dang Viet Hung, Deputy General Director – Department of Planning and Finance (Ministry of Health) with members from the Ministry of Agriculture and Rural Development, Ministry of Finance, Ministry of Science and Technology, and One Health Partnership for Zoonoses guided and oversaw the entire process of the assessment. The HSPI team, led by Dr. Nguyen Khanh Phuong, mobilized a multidisciplinary team within HSPI and recruited independent consultants and carried out the

fieldwork of the assessment and drafted the report in close collaboration with the World Bank team.

We would like to thank many leaders and staffs from: Ministries of Health, Agriculture and Rural Development, Science and Technology, Natural Resources and Environment, National Defense, and their respective departments particularly General Department of Preventive Medicine (Ministry of Health) and Department of Animal Health (Ministry of Agriculture and Rural Development); 63 provincial departments of Health and Agriculture and Rural Development; and representatives from development partners including WHO, CDC, USAID, and FAO. We would particularly like to thank Mr. Vu Ngoc Long, Deputy Head of Infectious Disease Control Division, General Department of Preventive Medicine and Ms. Dao Thu Trang, Manager of the One Health Partnership for Zoonoses Secretariat for all their support during data collection.

The report was prepared under the overall guidance of Enis Barış (Practice Manager of the East Asia and Pacific region, Health, Nutrition and (Population Global Practice), and Ousmane Dione (World Bank Country Director for Vietnam), Toomas Palu (Advisor, former Practice Manager). We greatly benefited from the inputs and review from the following World Bank staff (in alphabetical order, by last name) Caryn Bredenkamp, Patrick L. Osewe, Ajay Tandon, and Shiyong Wang.



List of Abbreviations

| | | | |
|----------|---|-------|--|
| ADB | Asian Development Bank | MoIT | Ministry of Industry and Trade |
| AMR | Antimicrobial Resistance | MoD | Ministry of Defense |
| CDC | Center for Disease Control and Prevention (United States) | MoF | Ministry of Finance |
| DARD | Department of Agriculture and Rural Development | MoH | Ministry of Health |
| DoF | Department of Finance | MPI | Ministry of Planning and Investment |
| DoH | Department of Health | MoST | Ministry of Science and Technology |
| EOC | Emergency Operation Center | NIHE | National Institute of Hygiene and Epidemiology |
| EPI | Expanded Program on Immunization | NTHP | National Target Health Programs |
| FAO | Food and Agriculture Organization | ODA | Official Development Assistance |
| GDP | Gross Domestic Product | OHP | One Health Partnership for Zoonoses |
| GDPM | General Department of Preventive Medicine | OIE | World Organization for Animal Health |
| GHSA | Global Health Security Agenda | PAHI | Partnership for Avian and Human Influenza |
| HPAI | Highly Pathogenic Avian Influenza | PHEIC | Public Health Emergency of International Concern |
| HSFAT | Health Security Financing Assessment Tool | PVS | Performance of Veterinary Services |
| HSPI | Health Strategy and Policy Institute | SARS | Severe Acute Respiratory Syndrome |
| IEC | Information, Education and Communication | UHC | Universal Health Coverage |
| IHR | International Health Regulations | UNDP | United Nations Development Program |
| JEE | Joint External Evaluation | USAID | United States Agency for International Development |
| MARD | Ministry of Agriculture and Rural Development | VND | Vietnamese Dong |
| MERS-CoV | Middle East Respiratory Syndrome Coronavirus | WHO | World Health Organization |





EXECUTIVE SUMMARY

Vietnam conducted a health security financing assessment using a tool developed by a regional technical task force — a very first effort, in the South East Asia region and beyond, to systematically analyze and gain insight into health security financing practices at the country level.

Vietnam conducted a health security financing assessment using a tool developed by a regional technical task force.¹ A very first effort, in the South East Asia region and beyond, to systematically analyze and gain insight into health security financing practices at the country level. The assessment had a dual purpose of pilot testing the tool and analyzing the current state of health security financing in Vietnam.

The assessment was national in scope involving the central level and all the 63 provinces. The Joint External Evaluation (JEE) structure guided the mapping of stakeholders, identification of health security activities, and consolidation of health security expenditures. Health security specific and sensitive investments extracted from government and development partners financial statements and analyzed for the fiscal year 2016. Also, planning and budgeting processes, institutional arrangements, and key stakeholders involved in health security activities were reviewed.

The Vietnam health security financing technical task force chaired by the Ministry of Health (MoH) and consisting of members from the Ministry of Agriculture and Rural Development (MARD), Ministry of Finance (MoF), Ministry of Science and Technology (MoST), and One Health Partnership for Zoonoses (OHP) directed the work. The Health Strategy and Policy Institute (HSPI), with technical support from the World Bank team, customized the generic tool to the context of Vietnam, collected

and analyzed data, and drafted the report. The Australian Department of Foreign Affairs and Trade (DFAT) provided financial support for the assessment through a multi-donor trust fund managed by the World Bank.

The health security financing analysis revealed that, in Vietnam, the government is the primary financier of health security activities. Annual budget allocations for recurrent, investment, and national target programs serve as the medium to transfer government funds to implementing agencies. Besides, during times of epidemic outbreaks, additional government funds can be accessed, such as contingency funds, budget reserves, financial reserves, and national reserves (strategic stockpiles). Total health security expenditure, including for central and provincial levels, in 2016, was estimated at VND 3,994 billion (equivalent to US\$181.2 million). Total per capita expenditure amounted to VND 42,757² (equivalent to US\$1.94), while the total health security expenditure was 0.09% of gross domestic product (GDP), and 0.29% of the total government expenditure.

More than three-fourths (77%) of the health security expenditures, in 2016, financed through government budget followed by external aid (12%) and other sources, including fees and charges (11%). Financing through recurrent budget allocations remains the single most important source of funding, accounting for 66% of the total health security expenditures.

¹ Consisted of officials from Governments of Cambodia, Indonesia, Lao PDR, Myanmar, and Vietnam; and World Bank, World Health Organization (WHO), Food and Agriculture Organization (FAO), World Organization for Animal Health (OIE), Center for Disease Control and Prevention (CDC), United States Agency for International Development (USAID), and the DFAT.

² The estimated total expenditure could be much higher when including private and commune level spending, which are not included in this analysis



External aid was spent mainly at the central level — accounting for 37% of the entire central level health security expenditure compared to only 3% at the provincial level.

Close to three-fourths of the total health security expenditure (73.9%) occurred at the provincial level. But, a wide variation in health security expenditures across provinces exist, ranging from VND 300.8 billion in Ho Chi Minh city to only VND 6.7 billion in Bac Kan province. Also, border provinces spend higher, which seems proper given their potential more elevated risk for public health events and cross border disease transmission. The comparative analysis of provincial per capita health security expenditure and provincial per capita GDP was not conclusive on the correlation between economic capacity and investments in health security. Self-financing provinces — more prosperous provinces that managed to mobilize own sufficient revenues to cover their general expenditures fully — tend to invest more for health security than non-self-financing provinces.

Expenditures on prevention activities, as classified in the JEE technical areas, were higher at both central (60%) and provincial (48%) levels. Spending on detection activities was higher at the central (29%) than at the provincial level (16%), whereas spending on response activities was much higher at the provincial level (32%) compared to 9% at the central level. Assessing by the 19 JEE technical areas, preparedness accounted for the highest proportion of expenditure at 17%, and it was followed by food safety, zoonotic diseases, workforce development, and immunization, each ranging between 10 and 15%.

Vietnam is the first country to conduct a comprehensive and systematic analysis of financing for health security activities. At present, there are no other reference data points to compare these results with and ascertain whether the level of spending was adequate, high, or low. That said, the JEE scores did provide proxy insights into the current core capacities and capabilities for the implementation of the International Health Regulations (IHR 2005), which could very well be a reflection of the corresponding

investment effort. As detailed in the JEE 2016 report, out of the total of 48 indicators assessed on a scale of one to five, Vietnam scored 4 in 8 indicators, 3 in 25 indicators, and 2 in 15 indicators. The overwhelming number of JEE indicators, 83%, scored 2 and 3, signifying the gaps in current capacities and shortfalls in needed investments. Moving these lagging JEE indicators to higher scores of at least fours, i.e., demonstrated capacity, presents a compelling need for increased investment. The Vietnam IHR Master Plan (2019–25) discusses in detail priority areas of investment and funding needs over the lifespan of the Master Plan.

The process of annual budget allocations for health security activities follows the general Budget Law and decentralized management. During times of epidemic outbreaks, however, some provisions allow increased flexibility to ensure a timely response. There are challenges in the current planning for epidemic prevention and control, such as limitation to effectively plan and allocate funding; lack of integration of disease surveillance by geographical area; limited information on coordination, funding sources, and outcomes for each health security activity; failure of planning to consider other sectors such as agriculture and tourism; and limited understanding at the central level of the actual workload and budget in subordinate units.

Health security activities are highly interdisciplinary and require close cooperation and effective coordination across ministries and sectors. Vietnam is trying to enforce coordination through the intersectoral steering committees constituted across the different administrative levels. However, noticeable overlaps and lack of clear mechanisms to enhance information sharing and coordination across the various sectors observed.

International organizations and development partners play an essential role in health security activities, especially in the areas of IHR (2005) coordination, antimicrobial resistance, a national laboratory system, and real-time surveillance. However, the coordination of aid resources is far from efficient. Engagement of the private sector in health security activities appears to be negligible and a missed opportunity.



section one

INTRODUCTION

Increased health security, with an efficient national emergency preparedness and response capacities, to protect people's health from known and unknown threats and risks is a critical and integral part of achieving UHC and building resilient health systems.

There is a renewed momentum and commitment globally for achieving sustainable Universal Health Coverage (UHC) by 2030, which is part and parcel of the Sustainable Development Goals (SDG). Increased health security, with an efficient national emergency preparedness and response capacities, to protect people's health from known and unknown threats and risks is a critical and integral part of achieving UHC and building resilient health systems. Over the past decade, Ebola, Middle East Respiratory

Syndrome (MERS), highly pathogenic influenza, and, more recently, the Zika virus disease outbreaks have demonstrated the ability of epidemics to devastate communities. These epidemics allude to the significant gaps in national preparedness capacities, sustainable financing, and multi-sectoral coordination at the country level. They also highlighted the urgent need to review existing national capabilities and work in close partnerships to strengthen outbreak preparedness and response.





Background on Health Security Financing Assessment

The World Bank, in 2016, established an International Working Group on Financing Preparedness (IWG) in response to the urgent need and advocate for increased investments in preparedness and response. The IWG comprises experts and leaders from multilateral organizations, academia, philanthropic institutions, governments, and businesses. It proposes ways in which all parties adequately finance investments to strengthen country and regional preparedness and response capacities for health emergencies. Furthermore, the IWG report highlights the importance of (i) developing investment case for preparedness and response, (ii) identifying approaches to prioritize allocations within existing national budgets, (iii) exploring options for incremental domestic resource, and (iv) defining ways for external assistance to catalyze and support local investments.

Building on the IWG recommendations, the World Bank prepared a health security financing assessment tool (HSFAT). It complements the World Health Organization's (WHO) efforts to support countries in the IHR (2005), particularly the implementation of the voluntary JEE and the national action plan for health security. The HSFAT was prepared in close collaboration with a technical task force composed of experts and high-level representatives from Vietnam, Indonesia, Myanmar, Lao PDR, and Cambodia; development partner representatives from WHO, OIE, FAO, the government of the United States, the government of Australia; and other stakeholders from civil society. It supports national governments to gain a better understanding of the state of health security financing and to provide the foundation

for the development of sustainable and robust investment. The tool is designed to generate evidence that facilitates national policy dialogue around health security financing in both human and veterinary health sectors and other sectors relevant to health security.

The HSFAT builds on the WHO Monitoring and Evaluation Framework of IHR (2005) capacities and all-hazard preparedness that includes: (i) annual reporting; (ii) after-action reviews; (iii) simulation exercises; and (iv) JEE. As the HSFAT was designed to complement these existing frameworks, the financing assessment should be an integral part of the continuum to be conducted soon after a JEE, a performance of veterinary services (PVS) pathway, a disaster risk assessment, or other health systems assessments³—and ideally within a few months in order to use the most recent data and leverage momentum.

Health security financing assessment is a cross-sectoral effort requiring contributions from many areas of government across multiple line ministries and sectors. Thus, a comprehensive assessment of financing for health security requires the collective contributions from ministries of finance, health, agriculture, livestock, wildlife, environment, water, sanitation and hygiene, transportation, defense, energy, information, and education, among others. The assessment is designed to advance a whole of society approach, which includes the private sector and other non-state actors, with a caveat that access to information permitting. Likewise, the assessment complements the Sendai Framework for Disaster Risk Reduction, the United Nations Plan of Action

³ The HSFAT also complements the World Bank's Health Financing System Assessment (HFSA) approach and can be conducted in sync with a Health Financing System Assessment. The HFSA offers a standardized, flexible approach to diagnosing constraints and identifying opportunities to building strong health financing systems. Countries that have already conducted the HFSA can use information from that assessment to inform the HSFAT, thereby simplifying the data collection process.

Disaster Risk Reduction for Resilience (UNISDR), and existing national disaster risk management plans and strategies through an all-hazard approach. It is, therefore, essential to constitute an interdisciplinary team that can build a holistic picture of financing for health security.

While the JEE and PVS pathway focuses on health security capacities, no such tool exists to analyze financing for health security. The HSFAT addresses these critical gaps in health security architecture. Repeated periodically to accompany the JEE and

PVS gap analysis, the HSFAT can serve to assess health security arrangements and the flow of funds to complement the work done by the PVS/JEE, and independently track and monitor the development and progress of health security financing over time. The HSFAT is structured in five sections: (i) health security organization and institutional arrangements, (ii) country macro-fiscal context, (iii) health security budgeting processes and resource allocation, (iv) financing of health security components, and (v) efficiency and sustainability of health security financing.





Vietnam's Health Security Context

Vietnam's geographical location is particularly prone to infectious diseases, including zoonotic diseases that are the result of interactions between humans, livestock, wild animals, and the environment. With global flows of trade, finance, people, and data connecting the region to the rest of the world, the risks of cross-border endemic infectious diseases are more threatening than ever before. The emergence and spread of disease are facilitated by a wide range of socioeconomic, demographic, and environmental factors, including close contact between humans and animals (both domestic and wild), high-risk livestock and wildlife farming practices, expanding urbanization, high population density, and climate change.

In recent years Vietnam has encountered recurring outbreaks and public health emergencies, including Severe Acute Respiratory Syndrome (SARS in 2003), avian influenza (H5N1 in 2003), influenza H5N6, and the pandemic strain of flu (H1N1 in 2009), among others. These threats demonstrate the continuing need to strengthen preparedness and response capacities to emerging infectious diseases and public health emergencies. Risky practices related to biosecurity of wildlife, livestock farming, trade,

These threats demonstrate the continuing need to strengthen preparedness and response capacities to emerging infectious diseases and public health emergencies.

consumption of animal products, and spillover of emerging viruses from animals to humans are serious concerns that will require continued prevention and response effort.

Although the country's recent progress in health security has led to a decrease in the number of reported H5N1 cases, outbreaks continue to occur today. Furthermore, Vietnam is at risk of H1N1 influenza and the avian influenza A(H7N9) virus, with the latter being currently endemic in neighboring countries. Rabies and other zoonotic diseases remain major public health concerns.

Vietnam has made substantial progress toward implementing the One Health approach to strengthen collaboration at the animal-human-environment interface and address the threats of zoonotic diseases. The country has improved its multi-sectoral coordination and has integrated joint planning and research to control infectious diseases effectively. It has also strengthened its cross-border strategies and epidemiology training. In 2016 Vietnam conducted a JEE and assessed its current status of capacities and capabilities in the implementation of the IHR (2005). Since then, several activities have taken place toward improving IHR (2005) core capacities, including the preparation of a seven-year IHR Master Plan (2019–25) that charts strategic directions and prioritizes implementation of JEE recommendations, costing of the IHR Master Plan, and conducting of health security financing assessments.

Despite the tremendous efforts, IHR (2005) core capacities in Vietnam remain mixed, and the need for increased financing for health security is higher. As detailed in the 2016 JEE report, out of a total of 48 assessed indicators, Vietnam scored 4 in 8 indicators, 3 in 25 indicators, and 2 in 15 indicators (related to antimicrobial resistance

Table 1 Vietnam's JEE Score in Comparison with Global and Income Group Averages

| Group | Overall average JEE scores | Selected technical areas—JEE scores | | | |
|-------------------|-------------------------------|-------------------------------------|------------|--------------|------------|
| | | Preparedness | Laboratory | Surveillance | Workforce |
| Global | 2.8 | 2.3 | 3.2 | 3.4 | 3.0 |
| IDA countries | 2.2 | 1.5 | 2.6 | 3.0 | 2.6 |
| Non-IDA countries | 3.5 | 3.3 | 4.0 | 3.8 | 3.5 |
| Vietnam | 2.9 | 2.0 | 3.0 | 3.5 | 3.3 |

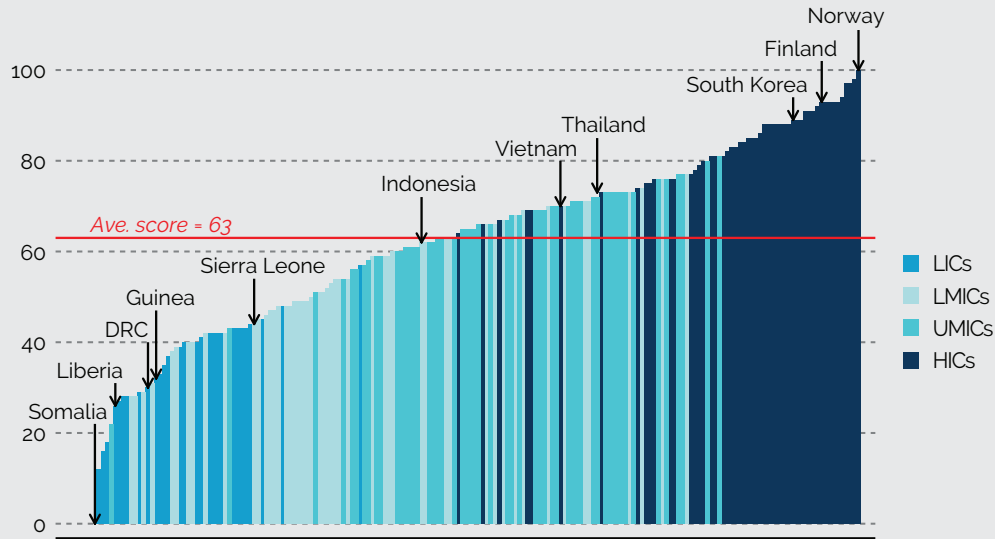
Source Computed from 76 JEEs using WHO JEE mission reports.

(AMR), preparedness, medical countermeasures, and IHR related hazards and Point of Entry (PoE)). There certainly is a need for increased investment to at least elevate the 2 and 3 to a score of 4, which signifies "demonstrated capacity" to enhance the IHR (2005) core capacities and capabilities. Vietnam's IHR core capacities, as measured by the JEE scores, in comparison with JEE scores from 76 countries (Table 1), show a mixed performance. Vietnam depicts an overall better IHR (2005) capacity compared to the global average and IDA countries. However, it lags in comparison with the average for non-IDA countries.

The Metabiota epidemic preparedness index provides further insight into Vietnam's capacity to detect and respond to infectious disease events. The index, which assesses national-level preparedness, covers 188 countries (Figure 1). It aggregates individual scores over five sub-indices, measuring each country's economic resources, public health communications, infrastructure, public health systems, and institutional capacity (Oppenheim et al. 2019). With an index of 0.686, Vietnam ranks 75th worldwide in terms of its national-level preparedness. Alongside Thailand, which ranks 64th with an index of 0.705, Vietnam has a higher score in the region



Figure 1 Metabiota Epidemic Preparedness Index by Income group—188 Countries



Source EPI, Metabiota (2018).

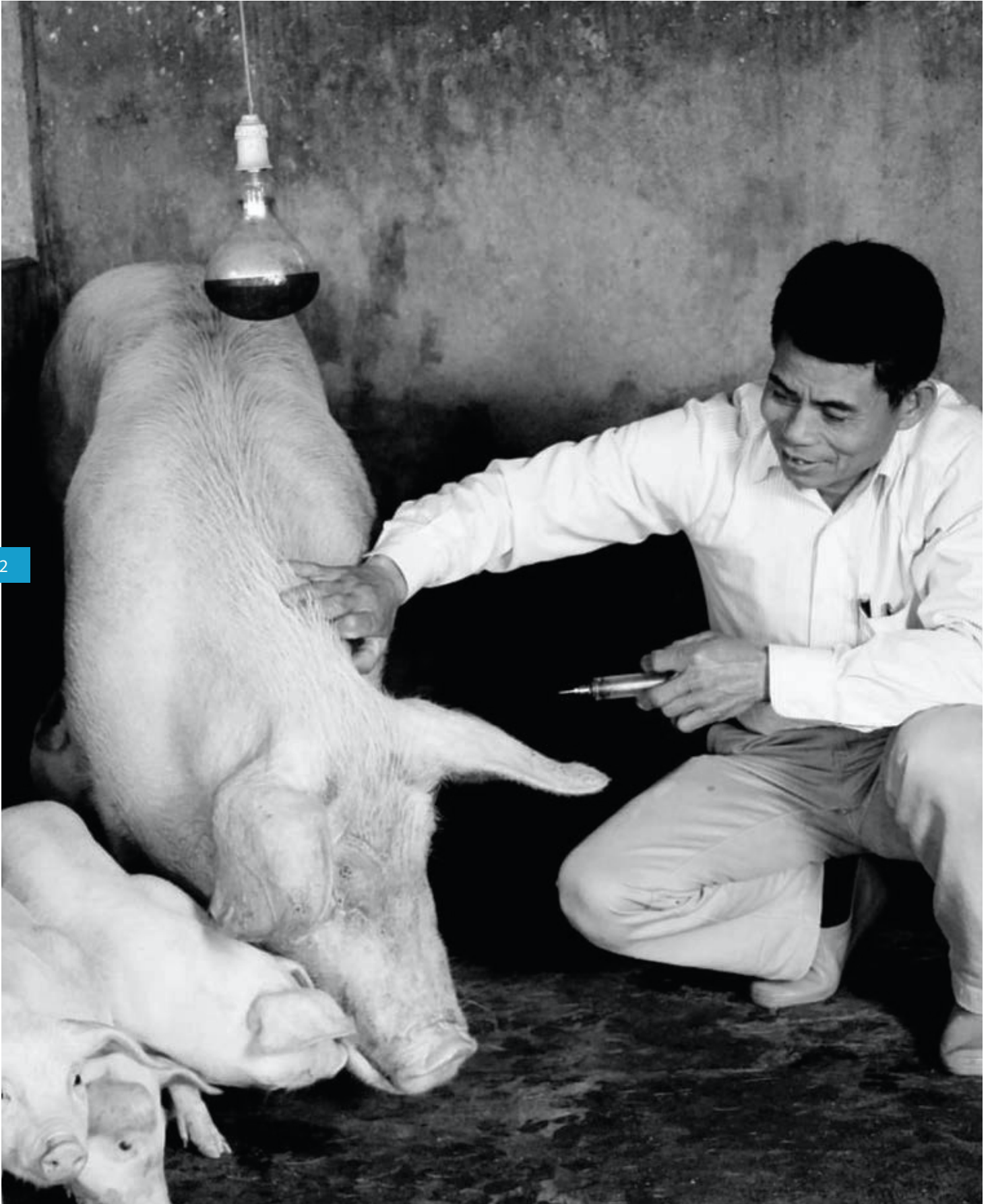
Note LIC = low income countries; LMIC = lower middle-income countries; UMIC = upper middle-income countries; HIC = high income countries.

in terms of its capacity to detect and respond to infectious disease events.

Preparedness capacities are reflections of the broader health care systems in both the human and veterinary health sectors. Many priority investment areas are common to the general public health systems and preparedness capacities, such as strong surveillance capacities, functional laboratory networks, effective infection prevention control, and a strong health workforce. It is, therefore, crucial to consider health security capacities and financing for health security within the broader health systems strengthening, as well as the general domestic resource use and mobilization effort. Prospects for increased fiscal space for UHC will have a positive bearing for financing health security activities.

Spending in health has been increasing, along with sustained economic growth. In 2016, Vietnam's public spending on health was comparable to its peer economies, 2.8% of GDP. Public spending on health increased significantly since 2000, rising approximately threefold in real per capita terms. A recent World Bank study outlined three factors that pose some risks to the sustainability of financing essential public health services (Teo et al., 2019).

First, the increase in public expenditure on health has been partly due to substantial increases in state budget spending on social health insurance (SHI). However, the SHI fund may run into a deficit because of the sharp rise in administrative costs and a policy decision to shift full cost recovery of curative health services from supply-side subsidies to demand-side financing through SHI. Second, the current health service delivery in Vietnam is skewed toward the provision of and payment for curative care in tertiary and secondary care facilities, rather than preventive care and health promotion. It is putting further upward pressure on health care demand and financing given the country's rapidly aging population, the shift in the burden of disease toward noncommunicable and chronic diseases, and rising demand from a growing middle class for better quality and more technological sophistication in health care. Third, the country is undergoing reforms in fiscal consolidation, limiting the availability of funds for government spending, including for health. The combination of these factors thus puts Vietnam's ability to maintain a sufficient level of public spending on health at risk. These risk factors will have implications on the country's ability to increase allocations to preparedness in achieving the IHR (2005) core capacities, which involve several sectors beyond health.





Objectives and Organization of the Report

Recognizing the need to understand the state of financing for health security better and to inform policies toward sustainable investment, Vietnam committed to conducting a health security financing assessment. On September 12, 2017, the Deputy Minister of Health, Nguyen Thanh Long, signed the official document assigning the HSPI⁴ to work with the World Bank team and the Vietnam national health security financing task force to conduct a health security financing assessment and pilot test the HSFAT. The Vietnam exercise is the first attempt to conduct a comprehensive and systematic health security financing assessment in the region and beyond.

The Vietnam health security financing assessment has two overarching objectives—assessing the current state of financing for health security and institutional arrangements, and pilot testing the HSFAT to obtain feedback for its further improvement. The assessment generates vital evidence to (i) inform health security policy dialogue and strategy development; (ii) establish a baseline on the overall size, sources, and flow of financing for health security; and (iii) describe current institutional arrangements and key stakeholders.

The specific objectives of the Vietnam health security financing assessment are as follows:

- Consolidate an inventory of health security activities and mapping of stakeholders using the JEE 19 technical areas.
- Assess size, sources, and flow of funds for health security activities to understand the state of health security financing, structure better, and modus operandi of resource flows, and the role of institutions.
- Identify constraints and opportunities for sustained financing to accelerate progress toward effective health security.
- Provide specific recommendations for further improvement of the HSFAT from the practical application of the tool in Vietnam.

The rest of the report is organized as follows. Section 2 presents a summary of the methodology used in estimating expenditures on health security, data collection processes and methods, and limitations. Section 3 discusses the results of the assessment under several subsections, including a description of health security activities in Vietnam; current structure, organization, and multidisciplinary coordination mechanisms; health security financing sources and budget allocation processes; and estimated expenditures on health security activities. Section 4 puts forward observations on the draft tool and areas of improvement for considerations and recommendations. Annex 1 contains a case study of the 2003–06 highly pathogenic avian influenza (HPAI), H5N1 outbreaks. It outlines a detailed account of how Vietnam mobilized resources to respond to the three waves of avian influenza outbreaks during 2003–06, and recovery and system strengthening measures since then. Annex 2 provides a summary of suggested modifications to the HSFAT and an updated tool.

⁴ A research institute under the MoH, the HSPI plays a critical role in the promulgation of health policies and strategies in Vietnam.





section two

METHODOLOGY AND DATA COLLECTION



Health security is a broad concept and includes activities required to minimize the danger and impact of acute public health events that endanger the collective health of the population living across geographical regions and international boundaries.

The Vietnam health security financing assessment, a cross-sectional analysis, was conducted from November 2017 to June 2018. The generic HSFAT was customized to capture the specific characteristics of the Vietnamese context (Annex 2). A national health security financing technical task force directed the work. It was chaired by the Ministry of Health (MoH) and consisted of members from the Ministry of Agriculture and Rural Development (MARD), Ministry of Finance (MoF), Ministry of Science and Technology (MoST), and One Health Partnership for Zoonoses (OHP). The HSPI led data collection, fieldwork, and analyses with technical support from the World Bank team. The DFAT provided financial assistance through a multi-donor trust fund managed by the World Bank.

Health security is a broad concept and includes activities required to minimize the danger and impact of acute public health events that endanger the collective health of the population living across geographical regions and international boundaries (GPMB, 2019). For the purpose of this assessment, the operational definition and scope of health security is limited to activities related to the 19 JEE technical areas, including the following: (i) prevention and control of epidemics transmitted from people to people, (ii) five zoonotic diseases⁵, (iii) food hygiene and safety, (iv) AMR, (v) biosafety, (vi) expanded immunization, (vii) surveillance, and (viii) chemical and radiation incidents.

⁵ The zoonotic diseases comprise avian influenza, rabies, anthrax, leptospirosis, and streptococcus suis.



Methodology

The financing assessment used several methods to collect and analyze data. These include public expenditure analysis, qualitative analysis, desk review, and a case study. Presented below is a brief description of each method:

EXPENDITURE ANALYSIS

Health security financing involves investments in a multitude of sectors and spans across a continuum of prevention, detection, response, and recovery activities. Some of these investments are *health security specific activities*, such as strengthening specialized laboratories, food safety, emergency operation center, and so on. These investments are relatively easy to track and attribute, i.e., expenditures incurred are easily identifiable and can entirely be attributed to health security financing. Whereas, many of the investments in human and veterinary health sectors can be considered *health security sensitive*, such as investments on health workforce development, which is a principal part of the broader health systems building block for UHC, at the same time critical to strengthening health security capacities. The situation is similar in other

sectors; for example, many investments in the overall service delivery systems for livestock and wildlife veterinary services are critical for active surveillance of infectious diseases originating in animals and can thus be considered health security sensitive. Health security sensitive investments are, in effect, bundled or shared investments that are part of the broader health systems and at the same time, contribute to health security. Only a portion of these bundled or shared investments should be attributed to health security using specific assumptions (in some cases, expert opinions) to determine the weight or proportion. It is, therefore, crucial in analyzing or tracking health security financing to include investments in both health security specific and sensitive activities.

In Vietnam, the health security financing analysis involved the following specific methods, including extensive consultations at the national and provincial levels. First, mapping of relevant ministries (at the central level) and departments (at the provincial level) against the 19 JEE technical areas to identify key players in health security activities. Second, consolidating a list of health security activities and their respective budget units within each of the ministries and the departments identified above through several iterations of reviews and consultations. Third, extracting health security expenditures through a detailed study and review of the government's financial statements from the respective budget units to identify the specific line items used to finance health security activities. A similar exercise replicated in extracting health security expenditures from financial statements of selected development partners to account for donor financing. Fourth, validating health expenditures extracted from government financial statements and the weights or proportions applied in attributing bundled or shared expenditures. The validation exercise brought together finance, health, and

Health security financing involves investments in a multitude of sectors and spans across a continuum of prevention, detection, response, and recovery activities.

agriculture officials from all 63 provinces in three separate workshops.

Extracting spending on health security activities has been a tough exercise involving several consultations and iterations. A big part of the challenges was the difficulty in determining which activities to consider as health security, attributing a portion of bundled or shared expenditures, as well as working through mostly paper copies of the government financial statements since the team had no access to the electronic copy of the detailed financial statements. Some of the JEE technical areas, such as food safety and zoonotic, are under a dedicated agency; in those instances, expenditures were entirely attributed to health security.

The expenditure analysis was complemented by in-depth fieldwork in three provinces—Ho Chi Minh City, Quang Ninh, and Quang Tri—which aimed to provide further insight on the financing of health security at the provincial level. The three provinces were selected based on the following criteria:

- *Level of health risk.* Provinces exposed to significant health risks, such as border provinces, provinces with high population density and susceptibility to infectious diseases, and provinces engaged in farming and or cross-border trade, were considered. Vietnam has no vulnerability index to classify provinces by level of health risk systematically. So, the above parameters are used as proxy indicators to identify the high health risk provinces.
- *Level of wealth.* Provinces in Vietnam are grouped into three levels: wealthy provinces that mobilize own sufficient revenue and make contributions to the central government budget; poor provinces that are recipients of budget subsidies from the central government; and all remaining provinces.

- *Level of decentralization and budget management.* In some provinces, the DoH allocates a budget to district health centers and hospitals, whereas in other provinces, the budget allocation is decentralized to district authorities. In the latter case, DoH does not have a financial statement or a budget narrative. Furthermore, the DARD does not allocate a budget to district levels and below because the budget allocation is decentralized to the local level in all provinces.

QUALITATIVE ANALYSIS

A qualitative analysis was conducted through in-depth interviews of key informants and small-group technical discussions using semi-structured questionnaires. It sought to obtain a better understanding of the following key issues:

- Health security organization and institutional arrangements
- The role and coordination of various stakeholders and units involved in health security activities; how information is shared between units; and which agencies are key players in mobilizing financial resources and responding to epidemic outbreaks
- Budgeting and allocating of resources to health security
- Flows of financial resources from the central to the district level
- Flows of financial information from the lower to the central level
- The effectiveness and sustainability of health security financing
- Limitations, weaknesses, and challenges of organizational and financial systems
- Recommendations for strengthening the organizational and financial systems



Data Collections

The assessment was national in scope and covered all the 63 provinces. In addition to expenditure data, information was collected through different means, including an in-depth interview of key informants, in-depth fieldwork, desk review, and a case study of lessons in responding to major outbreaks. The process followed, and the approach applied to collect this information is summarized as follows.

EXPENDITURE DATA

Expenditure data on health security activities were extracted from the government and development partners financial statements for the fiscal year 2016⁶. A template in Microsoft Excel was developed and used to collect and consolidate expenditure data; to map ministries, departments, units across the 19 JEE technical areas; and to consolidate a list of health security activities. The template was tested with two groups of respondents at the central level and one group at the provincial before rolling it out to all provinces. Also, brief guidelines were developed to assist in the data collection process. Data collectors were directed to follow the following three options in extracting expenditure data:

- First option: When allowed to access the electronic accounting system, filter specific line items as provided in the Microsoft Excel template. These records usually provided information on specific activities that match the questionnaire.
- Second option: When unable to obtain actual expenditure data, use the planned expenditure data from detailed estimates (also to request for a copy of the revised estimates, where available).

- Third option: In the absence of the above two options, collect aggregate data for the unit or the shared activity, and apply a proportion to estimate the expenditure. There was no common rule on what weight or percentage to use, and it varies based on the discussion with the officials in the particular unit.

At the central level, data were collected from relevant ministries including MoH, MARD, and MoF; development partners including WHO, FAO, USAID, and CDC; and nongovernmental organizations (OHP). At the provincial level, data were collected from the Department of Health (DoH) and provincial medical service units, Department of Agriculture and Rural Development (DARD), the Sub-Department of Animal Health, the Sub-Department of Agro-Forestry-Fisheries Quality Assurance, and the Department of Finance (DoF). Provincial data collection was facilitated by the People's Committees in each province. Data were reviewed in collaboration with provincial staff during the three regional validation workshops. Each province had two representatives from DoH, one from DARD, and one from DoF.

IN-DEPTH INTERVIEWS

An in-depth interview of key informants was conducted using semi-structured questionnaires. Key informants were selected following the mapping of health security activities, different ministries, agencies, departments, and units. The interviews at the *central level* were conducted with members of the health security technical task force from MoH, MARD, MoF, MoST, Ministry of Industry and Trade (MoIT), the Ministry of Defense (MoD), and development partners, as well as

⁶ The fiscal year for which the most recent and complete government financial statement was available at the time of the assessment.

NGOs (OHP). At the *provincial level*, key stakeholders from the following entities were interviewed:

- Health Department (Division of Finance, Division of Medical Profession, etc.)
- Provincial Preventive Medicine Center
- Food Safety and Hygiene Sub-Department
- Center for the Quality Control of Drugs and Cosmetics
- Provincial General Hospital
- Tuberculosis and Lung Diseases Hospital
- HIV/AIDS Prevention Center
- Provincial DARD, including Division of Finance, Sub-Department of Livestock Production and Veterinary, and Sub-Department of Agro-Forestry-Fisheries Quality Assurance
- Department of Finance
- Private sector enterprises operating in the animal health sector

At the *district level*, one district per province was selected for interviews with key stakeholders from the following entities:

- District People's Committee
- District Health Center/Hospital
- Health Unit (under district People's Committee)
- District Department of Finance
- District Department of Agriculture and Rural Development
- Private companies engaged in agricultural business, cattle farming

At the *commune level*, in each district, the research team conducted interviews with key stakeholders from the Commune People's Committee, and Commune Health Station, as well as interviews with animal health workers and farmers.





Limitations and Challenges

The data collection on health security expenditure was limited to central and provincial levels, using government and donors' financial statements. Districts, communes, and the private sector were not included. Also, private expenditures, including out-of-pocket (OOP) spending for health security, were not included. The Vietnamese household living standard survey was not disaggregated enough to allow extracting health security spending. However, fees and charges at the government veterinary facility were captured in financial statements and included in the expenditure estimate.

This was a pragmatic approach given the degree of fiscal decentralization and the limited access

to disaggregated budget and expenditure data at the district level and below, the limited time and resources available for the study, and the private sector's almost negligible contribution to health security financing.

Moreover, some expenditure items could not be obtained from audited financial statements but only from an approved budget, and therefore were estimated using the budget figures. Disaggregated expenditure information for some health security activities was unavailable, and as a result, it was calculated using assumptions to attribute part of the expenditure to health financing.

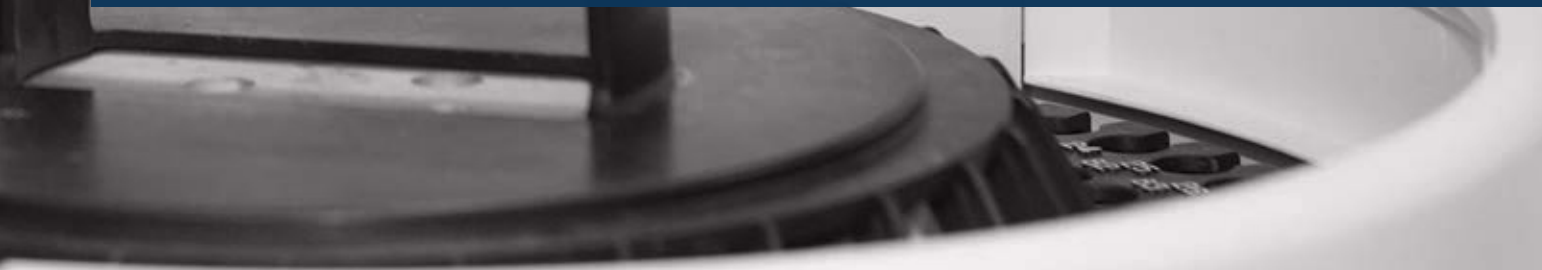


Photo by DarkoStojanovic / Pixabay.com, licensed under CC0.



section three

RESULTS



Health Security Activities in Vietnam

The IHR (2005) is an agreement between 196 countries, including all the 194 WHO member states, to collaborate to prevent and respond to urgent public health crises that transcend national borders and threaten the global community. Vietnam developed a national IHR implementation plan in 2005 under the guidelines of the Asia Pacific Strategy for Emerging Diseases (APSED). The first IHR review for Vietnam was conducted in 2012. Despite the country's progress, the staff involved in health security activities at the central level had limited general knowledge of health security and IHR. The level of technical understanding is even more limited at the provincial level, with most officials from health and agricultural sectors being puzzled when asked about the significance of these concepts. To local officials, health security activities are closely linked with the prevention of epidemics, public health activities to protect people and special incidents such as chemical catastrophes and radioactive leakage.

"Regarding the government's directives on budget allocation, we have found no phrase that denotes health security; the term epidemic prevention has been used instead. The new phrase must be from the new concept; we only engaged in epidemic prevention and control in the past and established the epidemic prevention steering committee. Health security is a new term, but its nature is not new." (Official of Department of Finance, Ho Chi Minh city)

By joining the GHSA in 2014, Vietnam reaffirmed its commitment to responding proactively to public health events, especially dangerous and emerging infectious diseases. The country had already been making advances in most health security areas even before signing the GHSA agreement. At present, health security activities are spread across various sectors, while a general coordination mechanism appears to be lacking. In what follows, health security

activities in Vietnam are summarized under each of the JEE 19 technical areas.

NATIONAL LEGISLATION, POLICY, AND FINANCING

Vietnam already has a legal framework including bilateral and multilateral agreements, strategies, action plans, and legal documents (such as laws, resolutions, decrees, circulars, decisions, etc.) to regulate health security activities. Table 2 summarizes the number of legal documents issued at various levels (from the National Assembly to the government, ministries, and local authorities) for the JEE 19 technical areas.

The food safety sector has the most significant number of legal documents with eight decrees and 80 circulars currently in force, while other sectors have none or just a few legal documents such as "response and workforce deployment", "linking public health, food safety, and relevant agencies," and "risk communication." Health security consists of highly interdisciplinary activities that require close and effective coordination between ministries and sectors. Accounting for just twelve documents out of hundreds of documents issued, the number of joint circulars and legal documents pointing to the coordination between ministries and sectors in direction and management activities is extremely limited.

According to the 2016 JEE report, Vietnam has assessed a score of three (out of a scale of five) for national legislation, policy, and the financing technical area. This score implies "developed capacity" in terms of the legal framework for IHR implementation. However, further analyses and reviews of legal documents relating to health security have shown that several areas of the legal framework are insufficient. The interdisciplinary coordination in health security activities is mainly


Table 2 Number of Legal documents by 19 JEE Technical Areas

| Technical area | Resolution/ directive | Law | Decree | Circular (joint circular) | Decision/official correspondence |
|--|--------------------------|-----|--------|------------------------------|-------------------------------------|
| 1 Develop legal documents on health security (guidelines, general direction for health security) | 1 | 2 | 1 | 1(0) | 5 |
| 2 IHR coordination, communication, and advocacy | | | | 1(1) | 2 |
| 3 AMR | | | 2 | 3(0) | 7 |
| 4 Zoonotic disease | | 1 | 1 | 2 (1) | |
| 5 Food safety | 1 | 2 | 8 | 80(7) | 3 |
| 6 Biosafety and biosecurity | | | 1 | 4 (0) | |
| 7 Immunization | | | 1 | 3 | 3 |
| 8 National laboratory system | | | | 2 | 1 |
| 9 Real-time surveillance | | 1 | 1 | 4(1) | 2 |
| 10 Reporting | | 24 | | 2(1) | 1 |
| 11 Workforce development | | | | 3(1) | 4 |
| 12 Preparedness | 1 | 1 | | 1 | 4 |
| 13 Emergency response operations | | | | 1 | 8 |
| 14 Linking public health, food safety, and relevant agencies | | | 1 | | 1 |
| 15 Medical countermeasures and personnel deployment | | | | | |
| 16 Risk communication | | 1 | | | 1 |
| 17 Points of entry | | | 2 | 2 | |
| 18 Chemical events | | 1 | 1 | 2 | |
| 19 Radiation emergencies | | 1 | 3 | 7 | 6 |

Note The number in parentheses is joint circular.

regulated in general legal documents such as laws and decrees but is limited to the specificity level for implementation guidelines such as circular, indicated by the small number of joint circulars.

IHR COORDINATION, COMMUNICATION, AND ADVOCACY

The General Department of Preventive Medicine (GDPM), designated as the national IHR focal point in 2006, is responsible for reporting to and linking with the international IHR focal point. In 2013, MoH established the emergency operation center (EOC) office including functional units under MoH; the Institute of Hygiene and Epidemiology/Pasteur;

the Department of Animal Health under MARD; and international organizations such as WHO, FAO, and CDC to enhance the coordination in the epidemic response and prevention. In 2017, MoH issued Decision No. 3796/QD-BYT on the establishment of the EOC for public health events in Vietnam at the MoH and EOC offices in the Northern, Southern, Central, and Tay Nguyen regions.

Upon request, the GDPM assigns groups of officials to participate in international disease prevention simulation exercises organized by the WHO Regional Office for the Western Pacific. Besides, Vietnam has signed agreements and a memorandum of understanding on disease outbreak reporting and quarantines with three

bordering countries, namely China, Lao PDR, and Cambodia. As the leading country for the Zoonotic Disease Action Package in the GHSA, Vietnam has established the OHP by upgrading the Partnership for Avian and Human Influenza (PAHI) Office.

ANTIMICROBIAL RESISTANCE (AMR)

Vietnam has demonstrated its commitment to combating AMR by establishing the national steering committee for AMR. Furthermore, the country's multi-sectoral commitment to preventing AMR has been concretized by the "national plan for controlling antimicrobial resistance," jointly issued by MoH and MARD. The AMR prevention activities implemented by MoH have included the following:

- a. Establishing the national steering committee and nine subcommittees for AMR monitoring
- b. Introducing measures for rational drug use by:
 - Promulgating legal documents to monitor and prevent AMR, such as regulations related to safe prescription, drug use in treatment, drug information, testing standards, and hospital infection control
 - Developing guidelines for diagnosis, treatment, and use of antibiotics
 - Developing guidelines for the safe prescribing and dispensing of antibiotics
 - Setting up drug and treatment councils to monitor prescriptions and drug use
- c. AMR surveillance:
 - Appointing 16 central hospitals nationwide to perform antibiotic surveillance in their laboratories
 - Investigating the AMR referencing laboratory at the national hospital of tropical diseases

AMR prevention activities implemented by MARD consist of:

- a. Implementing appropriate antibiotic use in animal husbandry by:
 - Listing the antibiotics used in animal husbandry
 - Using relevant communication to raise people's awareness
 - Piloting models on the use of safe antibiotics in animal husbandry and fisheries
- b. AMR surveillance:
 - Monitoring the use and residues of antibiotics in animal husbandry and fisheries

ZOONOTIC DISEASES

Vietnam articulated its multidisciplinary approach to deal with zoonotic diseases in 2016 when the government established the "OHP" consisting of 27 ministries and sectors, international organizations, and development partners in Vietnam. From this approach emerged the "One Health strategic plan for zoonotic diseases 2016–20" and the "multi-sectoral and integrated plans for zoonotic diseases." Multi-sectoral steering committees were also established from the national down to the local levels.

Committed to preventing zoonotic diseases, MoH, and MARD prioritized the surveillance of five zoonotic diseases—anthrax, avian influenza, streptococcus suis, rabies, and spirochaetosis. Three diseases—trichinellosis, bovine tuberculosis, and brucellosis—were further added to the list of zoonotic diseases in 2016. The surveillance system from the central down to the commune levels oversaw the following activities:

- Promulgating legal documents, technical standards, and assistance
- Monitoring and reporting cases related to the prioritized list of zoonotic diseases
- Conducting laboratory tests of the prioritized five diseases for monitoring and detection purposes
- Implementing immunization against avian influenza and rabies in animals
- Carrying out effective and timely communication to raise general awareness

Vietnam has demonstrated its commitment to combating AMR by establishing the national steering committee for AMR.

- Keeping the environment clean to prevent further outbreaks

FOOD SAFETY

Ensuring food safety is the responsibility of MoH, MARD, and MoIT. Each ministry manages certain commodity groups, and MoH has been designated to be the general coordinator. Ministries are also the focal points for developing legal documents and food safety standards and criteria of their respective commodity groups. Food safety assurance activities are implemented from the central to the commune levels, but the scope of tasks and management at each level is different depending on the designation of each ministry. Central and provincial units are responsible for conducting the following activities: managing the food production and distribution establishments, appraising and granting food safety certificates, and conducting food safety inspection and communication. The district and commune levels have functions limited to food safety management, inspection, and communication. They have no mandate to grant certification.

For food safety, the ministries have designated a list of eligible laboratories that include public and private facilities. In provinces, food safety testing laboratories of provincial preventive medicine centers or testing centers will be responsible for food safety testing.

BIOSAFETY AND BIOSECURITY

Since 2012, Vietnam has issued biosafety regulatory frameworks. As stipulated by the government, all microbiological testing facilities must be appraised and certified or self-declared to meet the biosafety standard. To implement the regulations on biosecurity set out by the government, four regional Institutes of Hygiene and Epidemiology/Pasteur are responsible for training laboratorians on biosafety skills. All establishments with microbiology laboratories nationwide are required to invest in staff training, the renovation of their facilities and equipment, and establish professional procedures to meet the biosafety regulations issued by the Government.

To ensure biosecurity, MoH has also agreed with other ministries (customs department of MoF,

border management department of Ministry of Public Security, border guard command of MoD) in detecting and reporting unusual biological events at airports and borders.

IMMUNIZATION

Ever since its inception in 1981, the Vietnamese expanded program on immunization (EPI) has covered all 11,000 communes, and the vaccination rate for children younger than five years old is currently at 97%. So far, Vietnam has implemented free vaccination campaigns for ten diseases in line with the WHO global vaccination plan. Between 2014 and 2016, in addition to routine vaccination programs, Vietnam carried out emergency vaccination campaigns such as the measles-rubella vaccination campaign directed at 20 million people aged 1–14 and 17–18. Also, Vietnam's vaccine companies have produced six vaccine types to meet domestic demand for the ten diseases mentioned above.

The EPI team at the central level is responsible for distributing the vaccines to all provinces nationwide; developing standardized procedures; and providing training, supervision, and technical assistance to the provinces. Vaccines are distributed from the local Institutes of Hygiene and Epidemiology/Pasteur to the communes. In all provinces, commune medical centers are directly involved in immunization initiatives. The centers for disease control and provincial medical centers are responsible for receiving vaccines from the upper levels, preserving and distributing vaccines to lower levels, and providing training and technical support to commune officials.

NATIONAL LABORATORY SYSTEM

According to the 2016 JEE report, Vietnam's medical laboratory system consists of about 900 infectious disease testing laboratories. Of these, 73 laboratories have diagnostic and reference capabilities:

- Four national-level laboratories: National Institute of Hygiene and Epidemiology, Pasteur Institute in Ho Chi Minh and Nha Trang city, Central Highland Institute of Hygiene and Epidemiology
- Six mid-level laboratories: National Hospital of Tropical Diseases, Ho Chi Minh Hospital



Photo courtesy of the Ministry of Health, Vietnam

of Tropical Diseases, two non-governmental laboratories—Oxford Welcome Trust in Ho Chi Minh and Hanoi city, National Hospital of Pediatrics, and Children's Hospital 2.

- The remaining laboratories are located in the centers of the provincial preventive system.

At the central level, infectious disease testing activities were assigned to the four Institutes of Hygiene and Epidemiology/Pasteur and the Regional Institute for Malaria and Parasitology. The main tasks of these units are to carry out testing for less equipped subordinate establishments; act as reference laboratories for the infectious disease specimens of centers of the provincial preventive system; and train on technical testing, biosecurity, and professional guidance.

At present Level 3 biosafety laboratories at National Institute of Hygiene and Epidemiology and Ho Chi Minh City Pasteur Institute have been able to perform confirmatory tests for some diseases requested by the IHR and several priority diseases in Vietnam, such as: H5N1 influenza, rubella, dengue, measles, hand-foot-mouth disease, Zika, tuberculosis, HIV,

malaria, and meningococcal meningitis. Vietnam has no Level 4 biosafety laboratory. To confirm emerging diseases that require testing at the fourth-level biosafety laboratory, the National Institute of Hygiene and Epidemiology and Department of Preventive Medicine will be the focal points in charge of sending the tests to international laboratories or reference laboratories designated by WHO. For pathogen testing on animals, DARD has set up labs in six regional centers. Provinces are responsible only for sampling and transferring the specimens to regional laboratories, not provincial laboratories.

In local areas, infectious disease testing laboratories are typically located in provincial CDC or preventive medicine centers. The provincial laboratories are responsible for sampling, detection testing, and confirmatory testing of diseases within their competence. Most of the provinces have invested in laboratories to conduct confirmatory testing for isolated pathogenic bacteria, including staphylococcus aureus, vibrio cholera, and other intestinal bacteria (salmonella shigella, Escherichia coli). In the case of tests conducted by MAC-ELISA,



such as Japanese encephalitis and dengue, only targeted provinces (large populations with large trading borders) are eligible to perform these tests. Most provinces will not carry out the tests but only collect the samples and transfer them to the regional Institutes of Hygiene and Epidemiology/Pasteur. The testing department of the district health center mainly performs detection tests for tuberculosis and malaria.

REAL-TIME SURVEILLANCE

Since July 2015, according to Circular No. 54/2015/TT-BYT, the number of infectious diseases requiring surveillance increased from 28 to 42. At the same time, Vietnam's infectious disease surveillance system began reporting cases online on a case-by-case basis in parallel with the periodic paper report. Real-time surveillance is implemented as follows:

- Each health facility is provided with an access code to the online Infectious Disease Information website.
- When detecting a case on the 42 monitored diseases, medical facilities and stations are responsible for reporting the cases directly on the website.
- According to the regulations, 20 particularly dangerous A-group diseases need to be reported within 24 hours, and 14 dangerous B-group diseases need to be reported within 48 hours of clinical onset or laboratory diagnosis.

In addition to indicator-based surveillance, central institutes also implement several sentinel surveillance systems applied for priority epidemics, such as dengue, influenza, and hand-foot-and-mouth diseases. Since September 2016, a comprehensive event-based monitoring system is being piloted in four provinces so that medical facilities, laboratories, and the community will report online unusual events related to human and animal health.

Regarding surveillance activities for zoonotic diseases, since July 2016, the law on animal health and legal documents has created the legal framework for MARD to set up surveillance systems for early detection of zoonotic diseases. The monitoring mechanism has been strengthened

The monitoring mechanism has been strengthened through changes in regulations regarding reporting responsibilities and standard reporting formats.

through changes in regulations regarding reporting responsibilities and standard reporting formats, as well as reporting periods of zoonotic diseases by district veterinarians. In parallel with routine surveillance, MARD has also implemented laboratory-based monitoring for early detection and surveillance of avian influenza that is sampled at live poultry markets nationwide.

REPORTING

Circular No. 54/2015/TT-BYT, dated 28 December 2015, sets out the reporting process, reporting content, and timing of infectious diseases. The medical examination and treatment units, as well as the health unit (under district authority), are, according to existing regulations, responsible for reporting to district health centers. District health centers and health care units at central and provincial levels report to the provincial centers for disease control. The provincial center for disease control reports to the GDPM and the national and regional Institutes of Hygiene and Epidemiology/Pasteur. Currently, in the form of e-mail and official correspondence, reporting is carried out weekly, monthly, quarterly, biannually, and annually.

The GDPM is the national IHR focal point responsible for routine international reporting to WHO. The Department of Animal Health has been assigned to report events related to animal health to the OIE. The Department of Food Safety is the focal point

that reports food safety issues to the International Food Safety Authorities Network (INFOSAN). The National Steering Committee reports to international organizations on the Public Health Emergency of International Concern (PHEIC) and significant epidemics.

WORKFORCE DEVELOPMENT

The active involvement of the workforce in health security activities through monitoring and timely responding to epidemics occurs in multiple sectors, such as health, agriculture, industry, trade, and organizations of the Fatherland Front. The health sector accounts for the most significant proportion of the workforce, consisting of regular staff (employed at commune health units under district authority, district health centers, centers of the provincial preventive system, and central preventive medicine institutes) and concurrent staff (employed at the medical facilities involved in surveillance and response to the outbreaks).

Vietnam has conducted several trainings and retraining to increase the capacity of the health workforce and carry out health security activities. Extended training programs consist of two majors, preventive medicine, and public health. The health sector also offers long retraining courses (3 months) and short courses (7 days) in epidemiology. Additionally, training courses on knowledge and skills for lower-level staff, especially grassroots health workers, are held every year.

PREPAREDNESS

Having a prevention plan is a crucial requirement for preparedness activities. Annually, MoH acts as the focal point for developing national epidemic prevention plans based on the analysis of domestic and international epidemics. Drawing on the national plan, the provinces and the Institutes of Hygiene and Epidemiology/Pasteur set up infectious disease prevention plans for their respective areas. At present, Vietnam has an epidemic prevention plan but has yet to develop prevention plans for PHEIC.

Ensuring financial and physical reserves is essential for preparedness activities. At the central level, the

government annually allocates funds to MoH to prepare for the epidemics. MoH usually uses these funds to purchase medicine stockpiles, chemicals, supplies, and equipment and distributes them to local levels as needed.

During large-scale epidemics, the provincial People's Committees and relevant ministries request the government to use the stock of the State reserve. The State reserve department acts as the focal point for managing the national reserve fund for emergencies, natural calamities, and disasters. According to the State reserve law, in addition to finance, the State reserve also includes disinfectants to clean the environment and preventive medicine for people in case of epidemics. MoH's general State reserve department is responsible for managing the State reserve.

At the provincial and district levels there are two funding sources for the epidemic response: an annual fund that is allocated to the health and agriculture sectors to allow them to prepare for an epidemic and a State reserve of 2–5% of the total budget expenditures of each level for preventing and dealing with natural disasters, epidemics, fires, and essential defense and security tasks, as well as other unanticipated yet pressing tasks.

EMERGENCY RESPONSE OPERATIONS

All levels from the central to communes establish epidemic prevention committees for the emergency management of disease prevention activities. The committees are usually chaired by the chairperson or vice-chairperson of the People's Committee at all levels and have members from health and other related sectors. MoH has a steering committee appointed to handle the routine prevention of dangerous and emerging epidemics. The government has defined the procedures and agencies involved in announcing and reporting outbreaks since 2010, and in 2016 they were revised in line with the actual conditions. Accordingly, A-Group epidemics are announced by MoH, and the Government; B- and C-Group epidemics are announced by the chairman of the provincial/ municipal People's Committee, and the timing of the epidemic reporting is within 24 hours once the case has been confirmed. Once the epidemic has



been reported, all regulatory, professional, and financial mechanisms are operated in a specific arrangement, such as the implementation of preventive measures using on-the-spot principles. The People's Committees at all levels have the right to direct the epidemic control and immediately mobilize resources on the spot without waiting for support from the higher level, undertake fast-track procurement activities, and so forth.

To carry out specialized activities for the prevention and control of epidemics, MoH has established an EOC at the central level. A standing focal point of the national steering committee, this specialized center is also responsible for providing professional advice. At the district and province levels, rapid response units will be set up at each of the institutes of the regional preventive system. Specific guidance is lacking, however, and the guidelines surrounding human resources, operational methods, and the technical portfolio of rapid response units are yet to be standardized. Whereas the rapid response units of the central institutes have specialized equipment, such as specimen suitcases and special specimen carriers for transportation, they lack toolkits for on-the-spot testing. The rapid response units at the provincial level are not equipped with specific equipment, drugs, chemicals, and tests, which means that they will use equipment and drugs from the unit's general storage for the prevention and control of epidemics. Several provincial hospitals are equipped with X-ray machines or portable ultrasound machines to fulfill the need for external examination mobilized by the DoH during an epidemic outbreak.

Drawing on its experience with the prevention of SARS and H5N1 influenza, the health sector has developed quarantine plans and arranged facilities, departments,

To carry out specialized activities for the prevention and control of epidemics, MoH has established an EOC at the central level.

and beds for quarantine at all levels. At the central level, within each domain, MoH designates one central hospital as the primary entity in charge of quarantine and referral patients. Furthermore, the ministry has plans to build mobile hospitals for the quarantine and treatment of large-scale epidemics. Generally, provincial general hospitals have a quarantine room with at least five to ten beds, and at the district level, the infectious disease wards have one or two designated quarantine beds. Provinces have also developed plans to appoint a district health center as the quarantine area for the entire province during major epidemic outbreaks.

LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

Regarding epidemics and PHEIC, such as avian influenza, food safety, and natural disasters, the Government will establish a national steering committee to coordinate multi-sectoral activities. The leading unit will be involved in activities such as promulgating multi-ministerial circulars and or signing memorandums of understanding and responsibility agreements with related parties. MoH has signed agreements with other ministries (customs department, MoF; border management department, Ministry of Public Security; border guard command, MoD) to facilitate the detection and reporting of unusual biological events. MoH and MARD have issued a multi-ministerial circular that sets out the guidelines for the prevention of zoonotic diseases and an agreement that stipulates the terms for information sharing between the two ministries about monitoring data and lab findings.

To test the strength of multi-sectoral cooperation between central and local authorities in the case of epidemics, Vietnam conducts simulation exercises with different scales and scenarios, such as the prevention simulation exercise for Ebola implemented in 2014, as well as those for the MERS and food safety in 2015.

MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

Although there are no established rules on personnel deployment and support from other countries



Photo courtesy of Vietnam - Livestock Competitiveness and Food Safety Project, the World Bank

and international organizations for the response to epidemics, several specific emergency response plans (for H5N1, MERS-CoV, Ebola, etc.) have outlined the procedures for receiving assistance from the international community in dealing with medical emergencies. Vietnam's multi-sectoral steering committee for public health emergency response will act as a focal point for the implementation of these guidelines.

RISK COMMUNICATION

The risk communication plan was first established in 2013 and continues to be strengthened from 2017 to 2021. In 2015, the GDPM developed a standard procedure for risk communication before and during public health emergencies. To date, Vietnam has implemented three essential elements of risk communication: behavior-change communication, executive communication, and medical emergency communication.

- Behavior-change communication: This is the responsibility of MoH's center for health communication and education, and local media units (center for health communication and education, communication division of district

health centers, and commune health units under district authority). These units perform both periodic and irregular communication activities. The communication channels consist of mass communication (television, radio, newspapers, posters, etc.) or direct communication (group and individual communication, etc.)

- Executive communication: In each case, MoH will assign a specific unit to carry out communication and report to higher authorities, relevant departments, the press, etc. The units responsible for communicating about health security-related information are usually the Department of Communications, the GDPM, and the Department of Food Safety.
- Medical emergency communication: The Government assigns MoH to take primary responsibility and coordinate with relevant ministries (Ministry of Information and Communications, national radio and television stations, etc.). The risk communication system during a public health emergency has been tested in several factual events, including the 2014 measles epidemic or the 2016 Zika cases in Vietnam. Besides, Vietnam also conducted a large-scale Ebola prevention simulation exercise in 2014 intending to assess existing risk communication capabilities.



POINT OF ENTRY

The quarantine activities in Vietnam are assigned in different ministries and agencies. The health sector is responsible for carrying out medical quarantines, and the agriculture sector is responsible for implementing animal and plant quarantines. The border management committee manages large international border checkpoints. Small border checkpoints are controlled and coordinated by the border guards (including for medical quarantines, animal and plant quarantines, customs, and security). Vietnam has also developed a legal framework to support international quarantine and compliance with international quarantine regulations. The provincial authorities will manage border areas without border checkpoints.

Each year, each border checkpoint prepares plans to prevent and respond to public health emergencies transcending into Vietnam through the borders. However, Vietnam has yet to develop a general response plan for all the border checkpoints. According to statistics from the GDPM, at all international and national border checkpoints, there are facilities and specialists available to conduct rapid patient diagnosis, quarantine, and treatment. Upon detection of abnormal biological and medical events or should there be a need of confirmatory testing, the medical quarantine unit will directly transfer the specimens to the nearest Institute of Hygiene and Epidemiology/Pasteur, and the animal quarantine unit will transfer the specimens directly to the regional animal health center without going through provincial/municipal medial units. In addition to surveillance activities, specialized quarantine units also carry out vector surveillance activities (such as mosquitoes, mice, etc.) and disinfection of equipment, goods, and the environment.

CHEMICAL EVENTS

Various sectors have issued legal guidelines on the management, monitoring, and reporting of chemical events. The natural resource and environment

management units conduct the detection of chemical events by monitoring and evaluating the environmental impacts of projects. The MoIT is responsible for managing chemicals and handling chemical events with the participation of other relevant ministries, such as MoD and MoH. Annually, the MoIT requests the provincial departments of industry and trade to develop plans and prepare response strategies to emerging issues. At the central level, the Ministry of Defense will manage the response to significant events.

RADIATION EMERGENCIES

Although there have been no radiation emergencies in the past five years, Vietnam is still at risk from radioactive sources, such as research reactors, as well as 40 sources in the medical facilities nationwide. Also, as a member of several international treaties on detection, monitoring, and response to radiation emergencies, Vietnam has promulgated regulations and designated an office responsible for responding to radiation emergencies. The Vietnam Agency for Radiation and Nuclear Safety (VARANS) under MoST is the government agency responsible for the preparation and response to any radiation emergencies in the domestic and international radioactive sources. MoST annually collects data and publishes reports on radioactive events and safety activities. However, the ministry has yet to establish a national radiation surveillance system and develop guidance on risk assessment, reporting, and monitoring. Twenty provinces nationwide have approved the radiation response plan, and conducted simulation exercises and skills training on radioactive response. Activities related to the radiation emergencies response in Vietnam include:

- Monitor the Fukushima radioactive risk.
- Implement the preparatory phase for monitoring and responding to potential hazards from nuclear reactors of the nuclear power plants in the near future, as well as China's nuclear reactors near the country's border.

Structure, Organization, and Multidisciplinary Coordination

DOMESTIC ORGANIZATIONS

There is no separate institutional network for the implementation of health security activities in Vietnam. Depending on the public health event, the Government and People's Committees issue decisions, appoint the primarily responsible sector and identify other sectors to coordinate the implementation of activities.

The primary and coordinating focal points are usually agreed upon at all levels.

The result of the mapping exercise revealed that several ministries, agencies, departments, and units are involved in one or more health security activities. Also, one health security activity may be implemented by multiple units. Table 3 shows that MoH (and its

Table 3 Key Actors in Health Security, Central Level

| JEE 19 technical areas | MoH | | | | | | | | | | |
|---|--------------------|------|-----|---|------|---------------------------|-----------------------|--|-------------------|---|-------------------|
| | MoH Cabinet Office | GDPM | MSA | Administration of Food Hygiene and Safety | VACC | Center for IEC for health | NIHE and Pasteur Ins. | Insurance of quality control for drug, vaccine | Vaccine companies | National Institute of Malarialogy, Parasitology, and Entomology | Central hospitals |
| 1 National legislation, policy, and financing | ■ | | | ■ | | | | | | | |
| 2 IHR coordination, communication, and advocacy | | ■ | | | | | | | | | |
| 3 AMR | | | ■ | | | | ■ | | | ■ | ■ |
| 4 Zoonotic disease | | | | ■ | | | | | | | |
| 5 Food safety | | | | ■ | | | | | | | |
| 6 Biosafety and biosecurity | | ■ | | | | | ■ | ■ | ■ | ■ | ■ |
| 7 Immunization | | | | | | | | ■ | ■ | | |
| 8 National laboratory system | | | | | | | ■ | | ■ | | |
| 9 Real-time surveillance | | | | | | | | | | ■ | |
| 10 Reporting | | | | | ■ | | | | | | |
| 11 Workforce development | | | | ■ | ■ | | | | | ■ | |
| 12 Preparedness | | | ■ | | | | | | | | ■ |
| 13 Emergency response operations | ■ | | | | | | ■ | | | | |
| 14 Linking public health and security authorities | | ■ | | | | | | | | | |
| 15 Medical countermeasures and personnel deployment | | ■ | | | | | | | | | |
| 16 Risk communication | | | | | ■ | ■ | | | | | |
| 17 Points of entry | | ■ | | | | | | | | | |
| 18 Chemical events | | | | | | | | | | | |
| 19 Radiation emergencies | | | | | | | | | | | |

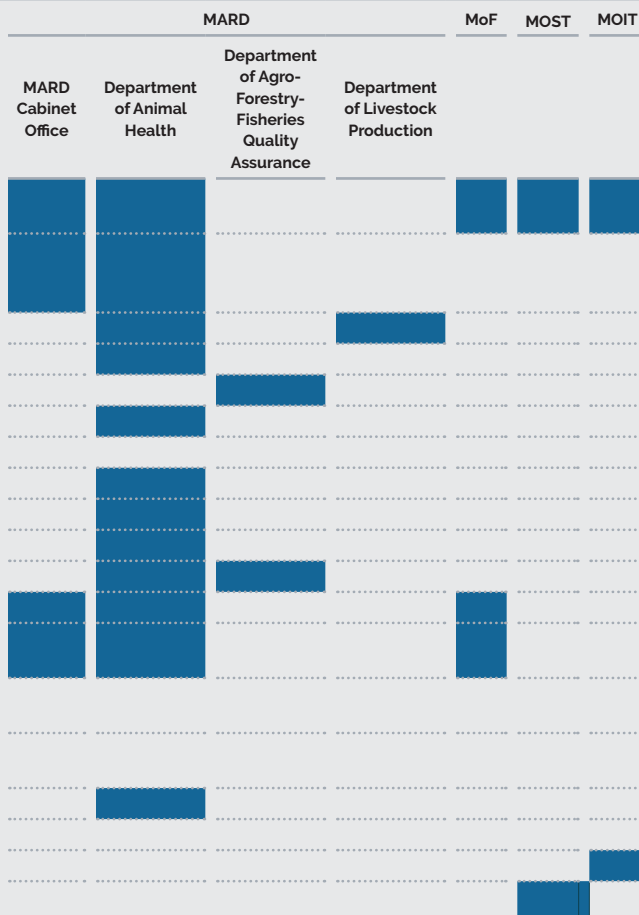


subordinate units) is responsible for 16 technical areas and is followed by MARD (and three subordinate units), which acts as the main focal point for 13 technical areas.

The health security activities within each ministry are often assigned to specific units. For example, the surveillance and prevention of communicable diseases is assigned to the GDPM. The Department of Medical Service Administration is responsible for controlling AMR. The Department of Food Safety supervises food safety while the Health Environment Management Agency manages the risk factors transmitted through the environment and water, among others. In the agriculture sector, the prevention of zoonotic diseases is assigned to the Department of Animal Health, whereas the Department of Agro-Forestry-Fisheries Quality Assurance oversees food safety and AMR.

The assignment of responsibilities to subordinate units in each sector is also implemented in a similar manner to that of the central level. The mapping has shown that in the health sector, almost all units of the preventive and treatment system at central and local levels are functional and have performed health security activities. In the event of outbreaks or public health emergencies, each ministry sets up a steering committee to coordinate the units and stakeholders within the sector.

At the provincial level (Table 4), the DoH and the provincial health units are involved in most of the health security activities that are implemented locally, except for the technical area related to the IHR implementation coordination, which falls outside the scope of local units' functions and duties. Similarly, to the central level, the coordination of routine surveillance and prevention of most infectious diseases in provinces is assigned to many different focal points. The DoH is the main focal point in the coordination of activities to prevent and control outbreaks in provinces. The involvement of many units and focal points at central and provincial levels causes difficulties in coordinating and reporting activities. It results in a higher implementation and supervision burden for the lower levels, as well as fragmentation and inefficiencies. The district coordination of epidemic surveillance activities is assigned to the district health center, which coordinates with the district hospital.



MULTIDISCIPLINARY COORDINATION

In a specific technical area, the assigned lead agency is responsible for promulgating multi-ministerial circulars or signing the memorandum of understanding or a contract of accountability with related parties. Despite available legal documents stipulating the responsibilities and coordination between sectoral stakeholders in every health security activity, the assessment at central and provincial levels revealed that the main activities are still carried out by the responsible units in the respective sectors. The participation from other sectors remains confined to outbreaks or incidents.

Several technical areas are spread across multiple implementing units, as depicted in table 4. For example, more than five implementing units



participate in the following technical areas: biosafety and biosecurity, national laboratory systems, real-time surveillance, reporting, workforce development, preparedness, emergency response operations, and risk communications. In such cases, it is essential to assign responsibilities and effectively coordinate between participating units.

"I find that all JEE areas have responsible units; however, in the opposite direction, there are areas involving more than one unit. It is good to some extent, but sometimes there is a lack of clear identification due to the overlap and poor coordination. It is unclear who is responsible for these areas." (FAO officer in Vietnam)

Multi-sectoral steering committees and coordination mechanisms exist at all levels. However, there is overlap and a lack of clear and effective mechanisms to enhance information sharing and coordination. The national steering committee and the local levels are the main driving forces for multidisciplinary coordination on human and animal diseases, as well as public health emergencies. Governments and People's Committees at all levels coordinate through multidisciplinary committees such as the National Committee for Incidents, Disaster, and Rescue; Steering Committee for Human Epidemic Prevention; Steering Committee for Zoonotic Diseases Prevention; and Steering Committee for Food Safety Disease Prevention. The steering committees consist of relevant ministries and departments, among which MoH and MARD have a permanent function. The national steering committee is primarily responsible for coordinating the planning and surveillance of disease prevention and responding to public health emergencies.

Sociopolitical organizations, such as the Fatherland Front, Women's Union, Red Cross Association, Youth Union, and Farmer's Union, take part in prevention and response activities. They participate in line with their existing functions and advantages. For example, the Women's Union participates in communication activities for the vaccination program, while the Farmer's Association focuses on communication activities related to zoonotic diseases. These organizations only get involved upon direct requests for cooperation from local authorities or the health sector in case of outbreaks or other public health risks. There are vertical (from

Private sector involvement in health security activities in Vietnam is nearly nonexistent.

central down to local levels) and horizontal (among local levels) variations in the degree of active participation from these organizations.

Private sector involvement in health security activities in Vietnam is nearly nonexistent. According to the communicable disease prevention law, private hospitals are required to report suspected cases of infectious diseases to local medical authorities. However, there is no compliance because of: (i) limited capacity of medical authorities, (ii) lack of mechanisms to encourage cooperation, and (iii) lack of penalties necessary to enforce compliance with communicable disease reporting. In the case of livestock and poultry epidemic outbreaks, private sector involvement is limited to vaccination activities, i.e., pay for the vaccination services for their livestock and poultry.

"Ho Chi Minh city's Steering Committee for Disease and Disaster Prevention will give multidisciplinary direction not only to public hospitals but also to private hospitals.

Almost all private clinics and hospitals participate in tuberculosis prevention programs. Ho Chi Minh City has a legal framework for private involvement against tuberculosis and HIV in terms of detection, reporting, and even treatment." (Official, Ho Chi Minh City Department of Health)

INTEGRATION AND COORDINATION OF INTERNATIONAL ORGANIZATIONS AND DEVELOPMENT PARTNERS

In 2014, Vietnam joined the GHSA, an initiative lead by the United States with support from WHO, OIE, and FAO. It offered an opportunity for Vietnam to participate in international cooperation activities as well as to receive technical and financial support from the international community to implement the GHSA 11 action packages. Since 2014, the U.S. Government and international organizations and development

partners such as WHO, FAO, OIE, CDC, USAID, United Nations Development Program (UNDP), Defense Threat Reduction Agency, EU, and Wild Conservation Society have assisted and cooperated with Vietnam in strengthening the laboratory system, developing an EOC in several provinces, and creating an instantaneous data sharing system in medical emergencies (Table 5).

Vietnam has a long-standing engagement and cooperation with international organizations and development partners. Notable involvement in major epidemic outbreaks such as SARS, avian influenza, Ebola, and MERS-CoV. For instance, the support from the international community was immediate for the government's call in the 2004 H5N1 influenza outbreak. Also, Vietnam has enjoyed timely financial and technical support from international organizations and development

partners for the fight against infectious disease programs, such as HIV/AIDS, tuberculosis, malaria, and expanded immunization.

Aid and international assistance activities are managed and coordinated according to provisions in the general legal regulations. Vietnam's legal system considers external assistance as part of the state budget. As a result, the management and the use of external funds for health security, disease prevention, emerging diseases, and emergency response are effectively coordinated.

The national steering committee for avian influenza has been assigned to coordinate the donors at the government level. MoH and MARD have developed national programs, such as the Integrated Operational Program for Avian and Human Influenza (OPI), 2006–10, Green Book;⁷

Table 5 Development Partners Participation in Health Security Activities, 2016

| | JEE 19 technical areas | WHO | FAO | USAID | CDC | One Health sector |
|----|--|-----|-----|-------|-----|-------------------|
| 1 | National legislation, policy, and financing | | | | | |
| 2 | IHR coordination, communication, and advocacy | | | | | |
| 3 | AMR | | | | | |
| 4 | Zoonotic disease | | | | | |
| 5 | Food safety | | | | | |
| 6 | Biosafety and biosecurity | | | | | |
| 7 | Immunization | | | | | |
| 8 | National laboratory system | | | | | |
| 9 | Real-time surveillance | | | | | |
| 10 | Reporting | | | | | |
| 11 | Workforce development | | | | | |
| 12 | Preparedness | | | | | |
| 13 | Emergency response operations | | | | | |
| 14 | Linking public health and security authorities | | | | | |
| 15 | Medical countermeasures and personnel deployment | | | | | |
| 16 | Risk communication | | | | | |
| 17 | Points of entry | | | | | |
| 18 | Chemical events | | | | | |
| 19 | Radiation emergencies | | | | | |

⁷ Integrated Operational Program for Avian and Human Influenza 2006–10, Hanoi 2006.



Vietnam Integrated National Operational Programs on Avian Influenza, Pandemic Preparedness, and Emerging Infectious Diseases (AIPED 2011–15), White Book;⁸ and The Vietnam One Health Strategic Plan for Zoonotic Diseases, 2016–20, December 2016.⁹ The Government uses these national planning programs as critical tools to coordinate activities and mobilize donors. Institutionally, the Department of Animal Health, with support from the Department of International Cooperation of MARD and the GDPM, is the focal point for the coordination of international assistance in this sector. To strengthen the coordination of aid, the Government and development partners agreed to establish a PAHI in November 2006. PAHI acts as a bridge between donors and the Government. It participates in meetings set up by the national steering committee on the prevention of avian influenza and human influenza to share information among stakeholders, organizing annual meetings, monitoring financial commitments, and supporting the development of national monitoring framework for avian and human influenza. In 2017, MARD and MoH unanimously agreed to set up the OHP Office with the same functions and responsibilities as those of PAHI. Seeking to mobilize aid for health security, OHP has played a pivotal role in connecting and sharing information between Government agencies and international organizations through websites, communication networks, international fora, and conferences in Vietnam.

"The main function of OHP is to connect Vietnam Government and multilateral and bilateral donor community" (OHP representative)

OHP is not the only mechanism in Vietnam responsible for coordinating aid activities and the involvement of international organizations. International organizations like the World Bank and UNDP also work directly with the Government. There are, however, certain limitations in the effectiveness of aid coordination and the involvement of international organizations, an issue long acknowledged by international organizations actively involved in Vietnam.

One solution to address these weaknesses is for the Government to develop a national health security action framework that enables donors to identify priority issues to focus on in their action plans.

"The weaknesses in the coordination of donor support for Health Security stem mainly from donors' many different frameworks and plans which often overlap but cannot be directly integrated into each other. A lot of donors focus on similar areas of emerging infectious diseases." (FAO officer)

One solution to address these weaknesses is for the Government to develop a national health security action framework that enables donors to identify priority issues to focus on in their action plans.

"If the government can make specific proposals, it is easier for us to respond to them and identify priority activities to support." (FAO Officer)

Interviews conducted with stakeholders revealed several challenges in aid management:

- The process of connecting Vietnam's priorities to donors' commitment and support lacks during the development of strategic plans, leading to an imbalanced allocation of aid resources.
- Despite having a priority setting process and implementation plans, the sectors continue to rely heavily on donors' objectives and are unable to use foreign aid independently.

⁸ Intergrated National Operational Program on avian influenza, pandemic preparedness and emerging infectious diseases, Hanoi, 2011.

⁹ One Health Strategic Plan for Zoonotic Diseases, 2016–20.

- In addition to compliance with Vietnamese regulations, donors are also constrained by the legal provisions of their countries to provide aid, making it difficult to negotiate and commit.
- Many coordination groups have been established with the role of coordination between national ministries and international partners. However, these groups are focused on information exchange and do very little to coordinate or provide technical support.
- The administrative procedures related to aid management have been improved to meet the requirements of both parties. However, there is still a lack of clarity in the mechanisms and State management policies on official development assistance (ODA). The plan appraisal and approval processes are complicated and tedious.
- Despite available guidance, the monitoring and evaluation activities of projects mainly focus on input management and control of administrative procedures. There is no holistic approach in place to monitor the implementation of sectoral strategic plans in line with donor contributions.

THE CHALLENGES OF PLANNING FOR EPIDEMIC PREVENTION AND CONTROL

The Prime Minister issued Decision No. 16/2016/QĐ-TTg to regulate the establishment, organization, and operation of the Steering Committee for Zoonotic Diseases at all levels. The ministry issued 11 circulars regarding the Animal Health Law, of which Circular No. 07/2016/TT-BNNPTNT dated May 31st, 2016, contains guidelines on the prevention and control of terrestrial zoonotic diseases, as well as detailed provisions on the prevention of avian influenza.

MARD, on behalf of the national steering committee for Avian Influenza Prevention, issued an emergency response plan for influenza strains that can be transmitted to humans (released in conjunction with Decision No. 210/QĐ-BNN-TY dated February 14, 2014). The plan entailed four scenarios with specific activities and appropriate response solutions: (i) Influenza A(H7N9) virus is not detected in poultry, environment, and humans; (ii) Influenza A(H7N9) virus is detected in humans, but not in poultry or the

environment; (iii) Influenza virus A(H7N9) is detected in poultry or the environment, but not in humans; and (iv) Influenza A(H7N9) virus is detected in poultry or the environment and humans.

Drawing on the annual status for infectious diseases in Vietnam and the world, as well as using the previous year's results, MoH formulates and promulgates the national plan for communicable diseases. For emerging epidemics such as H5N1, H1N1, H7N9, MERS-CoV, and Ebola, MoH usually publishes an action plan. Planning for each area: the National Institutes of Hygiene and Epidemiology/Pasteur, other leading institutes, and national target programs set up the area plan and managing field. The current planning shows several inadequacies, namely:

- Many focal points manage the planning and allocation of funds for the implementation of infectious disease control as vertical programs. The GDPM is, therefore, not able to plan for the entire infectious disease control system.
- Infectious disease monitoring should integrate disease surveillance by geographical area. Lack of overall planning will likely lead to fragmentation, waste of resources, and operational inefficiencies.
- The plan mainly lists the activities to be implemented in a given year; however, it fails to provide details on who is responsible for coordination, what are the funding sources, and what are the features and outcomes of each activity.
- The plan mainly draws on health sector data and does not consider the economic and social situation or related sectors such as agriculture and tourism.
- Regional institutes only have specialized functions, with the planning of activities and solutions being carried out for the next year rather than in operational terms.
- Planners in MoH and National Target Health Programs (NTHP) are often less capable of understanding the actual workload and budget compared to the stakeholders located in subordinate units. This is because the annual budget is immediately transferred to provinces once the MoF has appraised it. The provincial People's Committees then allocate the funds

according to local needs, and in so doing, they modify the initial national plan. The assessment and evaluation of the workload and budget conducted by provinces (DoH and DoF) are not reported to MoH.

The provincial DoH elaborates plans on epidemic prevention and control and submits them to the provincial People's Committees for approval. Local plans often use locally available information about the disease situation, and resources are allocated to meet the targets assigned by the central level. The limitations in activity planning for local disease prevention are as follows:

- Some programs for the prevention of infectious diseases have not yet been integrated into general programs for disease prevention.
- The planning is mainly calculated by adding 10–15% to the results and targets of the previous year without taking into consideration the actual needs and capacity assessment.
- The planning extends to all activities without prioritization, and it is based on a centrally allocated budget and targets.
- There is no performance appraisal tied to the deliverables of the plan.

EPIDEMIC REPORTING REGULATIONS

On January 28, 2016, the Prime Minister issued Decision No. 02/2016/QD-Ttg that stipulates the conditions for declaring an epidemic and announcing the successful containment of the disease. It also appoints MoH for A-Group epidemics and the chairman of the provincial People's Committee for B- and C-Group epidemics to take responsibility for the epidemic declaration. An exception applies to the A-Group epidemics in that it is incumbent upon the Prime Minister to announce the epidemics if the outbreaks spread rapidly from one province to another with major impacts on the health of the population and human life in general.

According to Circular No. 54/2015/TT-BYT, the GDPM is the only unit authorized by MoH to make international epidemic announcements. To date, the GDPM has reported the H5N1 (2009) and Zika (2015) outbreaks to the international IHR focal point, WHO. If the epidemic is in the list due for international monitoring, and it has been detected in any of the four surveyed provinces with international borders, the International Medical Quarantine Center will report the outbreak to the GDPM or the Regional Institute of Hygiene and Epidemiology/Pasteur without the need to directly notify the border medical unit of neighboring countries.

Health Security Financing Sources and Budget Allocation Processes

FINANCING SOURCES FOR HEALTH SECURITY

In Vietnam, preventive care activities in general and infectious disease control, in particular, are primarily financed through the government budget. It is supported by explicit policy pronouncement and targets to prioritize budget allocation for preventive care. One such policy is Resolution No. 18/2008/QH12, which states a target of at least 30% of the health budget to be set aside for preventive care. A review of the central budget allocation for the 2011–15 fiscal years revealed that only 16–17% of the total budget allocation for MoH allocated for preventive care. When topping it with the additional allocations from the NTHP, the proportion of funding for preventive care increased to 30%.¹⁰ Provincial level allocations for preventive care, though rising in recent years, are short of the 30% target, e.g., 19.1% in 2015, 19.6% in 2016, and 23.3% in 2017¹¹. Also, the policy does not specify the programs considered under preventive care. Many of the health security activities, such as surveillance and infectious disease prevention and control, are presumed part of preventive care and benefit from the prioritized allocation.

The government allocates budget for health security activities through multiple buckets, including recurrent budget, investment budget, budget for NTHP, and external aid. Also, during an epidemic outbreak, additional funds are accessed for response operations from contingency and reserve funds, including contingency funds of respective sectors, national budget reserve, national financial reserve, and national reserve (strategic stockpiles).

A. RECURRENT BUDGET

Recurrent budget is an allocation to meet spending for recurring tasks by central and local budget holding entities. It includes expenditures on personnel (e.g., salary, allowances, contribution to social insurance premium payment), utilities (e.g., electricity, water, petrol), repair and maintenance (e.g., medical equipment, building, vehicle), supervision (e.g., per diem, transport), conferences, and workshops among others. The 2002 Budget Law, amended in 2015, defines a decentralized budget management aligned to the government administration structure.

MoF, per provisions of the Budget Law, allocates annual recurrent budget to each ministry, agency, and institution, including MoH and MARD. Each ministry, in turn, decides on the specific allocations for its respective departments, units, and programs. So, MoH and MARD plays a pivotal role in determining the budget allocations for health security at the central level, mainly for preventive and preparedness activities. Accessing reserve funds for epidemic response operations follows a separate decision process, as described later.

The decentralized revenue and expenditure management assign specific mandates to the central and local levels. Accordingly, the budget at the central level is used to implement national programs and support the local entities in case of budget shortages; whereas, the budget at the local level is primarily used to implement local programs and activities. The respective provincial

¹⁰ MoH and Health Partnership Group (HPG), 2016, Joint Annual Health Review (JAHR) 2015: Strengthening grassroots health care toward universal health coverage, Ha Noi.

¹¹ In 2017 the proportion was high as a matter of decreased budget or curative care.

People's Council is responsible for the allocation of revenues and expenditures to the various sectors, departments, and programs within the province.

Recurrent budget is a crucial resource for routine operations. It funds the annual plans of each budget holding unit. For units within the preventive care system, recurrent budget is usually allocated based on the number of staff members involved in the routine operation of the preventive care units and per capita (for preventive care activities). Many provincial health departments practice vertical management, i.e., the DoH taking responsibility for managing, allocating, and supervising the state budget expenditure in health sector units at the provincial level and below. Of the three provinces included for the in-depth analysis, only Quang Tri province follows this model. Ho Chi Minh City and Quang Ninh province are more decentralized, whereby the DoH only undertakes the management and allocation of the state budget to the provincial health units within the city under the health departments. The district health units are managed by district People's Committees and funded by the provincial DoF.

B. NONRECURRENT FUNDING

Nonrecurrent funding is the funding for epidemic prevention and control activities that may be allocated at the beginning of the year or supplemented during the fiscal year. According to the survey in Ho Chi Minh City and Quang Ninh province, funding for epidemic prevention is allocated at the beginning of the year (for example, Ho Chi Minh City annually allocates to the municipal Preventive Medicine Center about VND 10–20 billion for procurement of chemicals and supplies for epidemic prevention and control). By the end of the fiscal year, the unspent amount can be used for other purposes or carried over to the following year's revenue sources.

"... Every year, there is an almost fixed amount allocated for epidemic prevention, control, and response. The city allocates funding to the DoH and the DARD, and the funding to districts is separate. Each year, about VND 10–20 billion is allocated to the [Provincial] Preventive Medicine Center for the purchase of chemicals and supplies for epidemic prevention

and control, which is the funding for preventive care. Funding for epidemic prevention is allocated in the same way every year..." (Officer of HCMC DoF)

"... The province always has contingency funds for epidemic prevention and control. The health sector allocates its entire budget for preventive care to subordinate units at the beginning of the year. The funding for epidemic prevention and control is derived from the recurrent funding..." (Officer of Quang Ninh DoH)

"... Currently, the [concerned] units in Quang Ninh always reserve funds for epidemic prevention and control for the procurement of adequate supplies and chemicals to prepare for epidemic prevention and control. (Officer of Quang Ninh Health Department)

Apart from receiving support from the state budget within the province, districts also qualify for financial assistance from the district People's Committee for epidemic and disease prevention and control (e.g., Ha Long City in Quang Ninh province receives approximately VND 1 billion). However, this support is often unstable and heavily reliant on the local financing capacity. In poor provinces such as Quang Tri, health activities in general and epidemic and disease prevention and control activities, in particular, tend to be dependent on provincial funding, while the amount of funding from the district is almost negligible.

C. INVESTMENT BUDGET

Investment or capital budget is the responsibility of the state budget. It covers investments in infrastructure and other investment-related activities, such as funding to support state enterprises and the national reserve. Health security investments include building of offices and laboratories, procurement of dedicated medical equipment, vaccine production lines, and replenishment of national reserves. The Ministry of Planning and Investment (MPI) is the advisory body to assist the Government in elaborating on the principles, criteria, and norms for the allocation of investment budget from the state budget. MPI oversees the allocation of the investment budget from the central budget to the ministries, sectors, and localities. MPI also coordinates with MoF to include the investment budget in state budget estimates and allocates the central budget to each

ministry, ministerial-level agency, government entities, and other central and provincial agencies.¹²

D. BUDGET FOR NATIONAL TARGET HEALTH PROGRAMS (NTHP)

NTHP pursue several objectives: (i) actively prevent and control several social diseases, and dangerous epidemics, (ii) detect and contain epidemic outbreaks in a timely manner, (iii) reduce the morbidity and mortality rates, and (iv) contribute to social equity in health care and better quality of life.¹³ The NTHP for the period 2012–15 was approved with a total funding of VND 12,770 billion from the central budget, local budget, international cooperation, and other sources. The NTHP allocates separate funds to each preventive care program, for example, to infectious diseases such as tuberculosis, malaria, dengue fever, HIV, and EPI. In the period 2016–20, the NTHP was approved relatively late by Decision No. 1125/QĐ-Ttg dated 31/7/2017, with the total funding of VND 19,380 billion. According to the report on the implementation of the state budget estimation for the period 2011–15, the funding for NTHP increased between 2011–13 but declined significantly during 2014–15. The gradual decrease of the financing allocated to NTHP from 92% to 53% signified an increased dependency on foreign aid and loans, which could only meet about 50–70% of the need. As noted by localities, target program funding plays a crucial role in funding the professional activities of preventive care units.

"Regarding the budget, in the previous years, it mainly relied on target programs." (Officer of Quang Tri DoH)

The field survey in the three provinces shows that the funding from NTHP for epidemic prevention and control in recent years has been minimal, and delay in its release. Delay in the release of NTHP funds are common, at times up to a year, e.g., the funding for 2016 was only released by October 2017, since the decision on approval for the period 2016–20 was only issued by July 31, 2017.

There are no NTHP available in the agriculture sector. Only rabies is included in the NTHP, and the funding for this program is derived from local sources.

E. RESERVE (CONTINGENCY) FUND

Under the State Budget Law, the contingency budget is used to address the consequences of natural disasters and enemy sabotage but also to meet urgent needs for which there is no other funding allocated or the funding in the budget estimates is insufficient (including a need for increased replenishment for the budget at the lower level). This can happen when the superordinate bodies, the budget user, and the subordinate government, even after reallocating and transferring expenditure items, still cannot handle the funding needs. The contingency budget is set at 2–4% of the annual budget estimate.

"For example, in 2018, the contingency budget was VND 26 trillion, of which the amount of VND 10,000 trillion was budgeted at the central level and was kept by the MoF. The contingency budget was meant to be used for the following three groups of activities: (i) disaster response; (ii) response to national defense and public security problems; and (iii) to deal with other unexpected tasks." (Officer at MoF)

Article 9 of the State Budget Law dated 2004 stipulates that central and local government budget estimates shall increase from 2% to 5% of the total expenditures from the budget at each level to cover natural disasters, fires, crucial national defense and public security assignments, and other unexpectedly urgent tasks arising beyond the estimates in the budget year.¹⁴ The authority with decision-making power over the use of the contingency budget is specified as follows:

- a. Central budget reserves: MoF can decide on the expenditures of VND 1 billion or less, which is subsequently reported to the Prime Minister. The amount over this level must be submitted to the Prime Minister for consideration and approval.

¹² National Assembly XIII, 2015, State Budget Law

¹³ Prime Minister, Decision 1208/QĐ-Ttg dated 4/9/2010 on approval of National Target Health Programs for the period 2012–2015.

¹⁴ The State Budget Law dated 2015 supplemented the task of spending on "diseases and epidemics" into the purpose for use of the contingency budget.

- b. Local budget reserves: the chairman of the People's Committee can decide or authorizes the finance agency to decide.

According to the State Budget Law, localities must also set aside 2–4% of their total state budget expenditures to contribute to the local reserve fund. This amount, if unused, must still be reserved as a local state budget reserve fund in case of emergency response to epidemics or other similar threats. The reserved budget is divided into three levels (provincial, district, and commune). If any level cannot assure or it exceeds the capacity, it must be reported to the upper level for resolution.

F. FINANCIAL RESERVE FUND

The State Budget Law specifies the establishment of a financial reserve fund at the central and provincial levels. The district and commune levels can borrow from the provincial financial reserve fund. The financial reserve fund is made up of various sources, including: (i) increased revenue, (ii) the budget balance, (iii) the share set aside in the annual budget estimates, and (iv) other financial sources as prescribed by law. The financial reserve fund is used to meet the expenditure needs when the revenue is not available in time and must be returned within the budgetary year. In cases where the budget reserve is used up, the financial reserve fund may be used up to 30% of the balance of the fund. Every year about VND 100 billion is set aside from the budget for special events such as natural disasters, severe epidemic outbreaks, and war. In case the budget reserve fund is exhausted, money from the financial reserves is released at the maximum amount, which is equal to 25% of annual expenditures according to the estimates. These funds are rarely used.

G. NATIONAL RESERVE

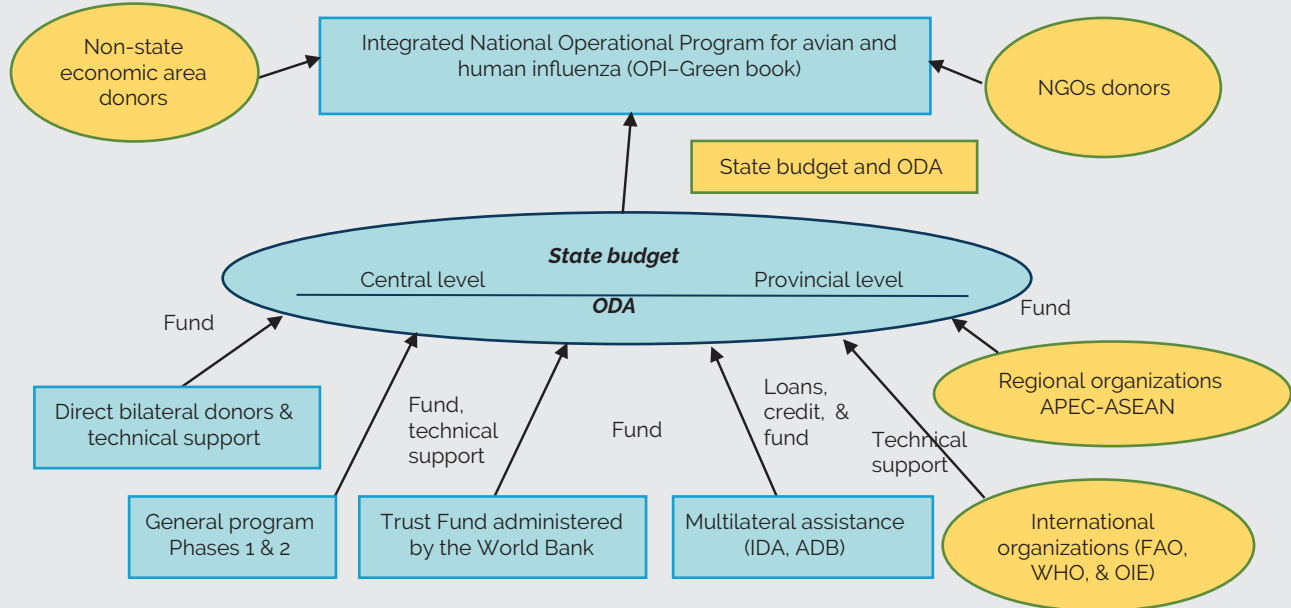
According to the 2012 National Reserve Law, national reserves consist of supplies, equipment, and goods under state management, which is used to prevent proactively, control, and overcome the consequences of disasters, fires, and epidemics, as well as finance national defense and public security activities. The Prime Minister is authorized to decide on the release of national reserve goods following the provisions of

The history of international cooperation for disease prevention and control began long before Vietnam joined GHSA.

the law. Decree No. 94/2013/ND-CP provided the list of products for the national reserve to include pesticides, disinfectants, environmental cleaning chemicals, decontaminants for treatment of water in aquaculture, veterinary drugs, vaccines, and anti-epidemic medicines for human use. Of these reserved goods, the MoH is assigned to manage two items, namely, medicines for human use directed at epidemic prevention and control, and chemicals for disinfection and decontamination of water. The MARD is assigned to manage pesticides, disinfectants, environmental cleaners, chemicals for water decontamination in aquaculture, medicines for cattle and poultry, and aquaculture (veterinary drugs, vaccines of all kinds). The state budget spent on national reserves complies with the State Budget Law and is included in the annual state budget estimates. Based on the national reserve plan and the assigned budget estimates for the national reserve. The MoF allocates funding to the ministries undertaking the procurement and management of national reserved goods. To date, the vaccines for human use have not been included in the national reserve list. This is a serious shortcoming that needs to be addressed.

H. EXTERNAL AID

The history of international cooperation for disease prevention and control began long before Vietnam joined GHSA. For decades, the global community has provided financial and technical assistance to Vietnam to address the challenges posed by communicable diseases such as TB, malaria, and HIV/AIDS, and the EPI. Especially in case of emerging diseases such as SARS, avian influenza, Ebola, and MERS-CoV, Vietnam enjoyed timely support from international organizations as well as development partners. A noteworthy example is the outbreak of the bird flu H5N1 outlined in Figure 2. When the

Figure 2 Multilateral Financing Framework for Avian Influenza Prevention and Control

first cases were detected in 2004, the government reached out to the international community and received immediate assistance from various sources.

The financial support from international sources in the fight against bird flu during 2004–05 amounted to US\$24 million (out of a total commitment of US\$74 million). For the period 2006–10, US\$132 million was received (out of a total commitment of US\$200 million). During 2011–15, US\$203.78 million was received (out of a total commitment of US\$384 million).¹⁵ This funding came from direct bilateral donors (13 nations), the Joint Government-UN Program, the Trust Fund administered by the World Bank, multilateral assistance (including loans, credits, and grants from the Asian Development Bank (ADB) and the World Bank), and support from regional organizations such as Asia-Pacific Economic Cooperation, and Association of Southeast Asian Nations. As Vietnam achieved its middle-income country status in 2010, the proportion of international support for disease and epidemic prevention and control has fallen, and there was a shift to less preferential ODA loans. In the three in-depth

fieldwork provinces, there were almost no aid for health security, possibly because Ho Chi Minh City and Quang Ninh are rich provinces.

External assistance for health security activities is mostly in the form of grants. The management, reception, and use of grants must comply with Decree No. 131/2006/ND-CP dated 9 November 2006 that regulates the use and management of ODA (which was replaced by Decree No. 16/2016/ND-CP dated 16 March 2016). Similarly, Decree No. 93/2009/ND-CP dated 22 October 2009 regulates the use and management of foreign non-governmental aid.

The procedure to mobilize and manage external grants for disease and epidemic prevention and control before and after the epidemic outbreak. Before an epidemic outbreak, the management and use of external aid is outlined as follows:

- Mobilization of funds for programs and projects.
- Development, appraisal, and decision on policies regarding investment in programs and projects.

¹⁵ Ministry of Agriculture and Rural Development, and Ministry of Health. 2011. The Vietnam integrated national operational program on avian influenza, pandemic preparedness and emerging infectious diseases (AIPED) 2011–2015, Hanoi (White book)

- Signing of grant agreement for programs and projects.
- Management and implementation of programs and projects.
- Completion and review of outcomes of programs and projects.

The process of implementing the above steps, in addition to complying with donors' requirements, must also comply with the current procedures regarding state budget management and public investment management.

Post epidemic external grant is considered emergency relief when: (i) it is provided immediately after an epidemic occurred, and (ii) it is prolonged up to three months after the termination of an outbreak. After this time limit, if aid continues, it shall be regarded as aid for addressing an epidemic's consequences and shall comply with the standard provisions applicable to foreign non-governmental aid.

Authorities to approve emergency relief:

- The heads of the state bodies and organizations, as well as the presidents of the provincial People's Committees, shall approve the aid amount with specific distribution addresses at donors' requests.
- The President of the Central Committee of the Vietnam Fatherland Front shall approve the aid amount without specific distribution.

The recipients of donated goods shall carry out customs procedures and certification of the donated goods. All nonrefundable or humanitarian donated aid in kind shall be exempted from import tax (including import tax and value-added tax applicable to imported goods).

Circular No. 225/2010/TT-BTC dated 31 December 2010 on state financial management of nonrefundable foreign aid as a component of the state budget stipulates that the recipients of donated goods shall, under the guidance of the MoF, make reports on their receipt and use.

The cash-based aid from international organizations has been limited since 2016. There have been only a few support projects at the central level, such as through the CDC, WHO, World Bank, ADB, and FAO,

while the funds are used for training, workshops and seminars, sentinel surveillance, and decree implementation. However, the size of funding has been negligible. In the provinces, there is almost no aid for health security, probably because the two provinces within the study scope are rich ones (Ho Chi Minh City and Quang Ninh province).

Many donors are increasingly shifting focus from investing in "emergencies" related to the control of avian influenza and human flu to other developmental issues, including other prioritized communicable diseases. As a middle-income country, Vietnam is in a financing transition process. The level of total ODA funding for avian influenza and human flu during 2011–15 was lower than that during 2006–10.

To effectively coordinate the aid resources for health security, the government needs to develop national plans and strategies such as "AIPED, 2011–15", which is accompanied by estimated expenditures, budget estimates, and options for mobilization from the state budget and ODA. The total cost of the plan implementation during 2011–15 was estimated at VND 8,069 billion (equivalent to about US\$384 million). The financing of the plan was, more or less, equally distributed to the state budget (47%) and ODA (53%). This is a case in point to emphasize the need for continued international support for disease and epidemic prevention and control in Vietnam.

I. PRIVATE SECTOR

Other than the general provisions of the State Budget Law on the collection of voluntary contributions into the budget, there are no specific regulations on the management of donations and voluntary contributions by organizations and individuals from within and outside the country. In cases of an outbreak, support and relief shall be provided directly by various organizations and individuals, or through the Vietnam Fatherland Front.

There is almost no significant involvement of the private sector in health security activities. The in-depth fieldwork has revealed that the private sector could participate in activities related to early detection and sample testing. However, there was a practical reflection that preventive care activities are not profitable for private investors. Moreover, there is

no legal framework available to regulate the private sector's social responsibilities in the implementation of health security activities. Additionally, there are no regulations on receiving private funding and no provision on expenditure items from this source in the state budget. Existing regulations are for NGOs and bilateral support. As a result, mobilizing resources from the private sector to support health security activities in Vietnam remains a serious challenge.

"... Mobilized funding from the private sector is scarce. Some private companies are involved. If we do well, they will be willing to fund. But the key is that there is no mechanism for reception and spending. At the same time, there are no regulations or documents that mobilize them to engage or attach social responsibilities to them. So, it is hard..." (Manager, MARD)

"... There is no mobilized funding for epidemic prevention and control, only funding from the provincial budget, and when outbreaks appear, the localities also provide additional support, but it is still state budget and nothing from enterprises. Also, other organizations may provide additional support. There is no support from the private sector; this sector is only mobilized in case of an event or national disasters such as rainstorms, collapsed houses, there is no private support for epidemic control..." (Leader of a health sector unit)

PLANNING AND BUDGET ALLOCATION PROCESSES

Disease and epidemic prevention and control activities are often integrated into the annual health plans of the DoH and the provincial preventive medicine centers; and the same procedure by the provincial DARD and the Department of Animal Health. As an epidemic emerges, the provincial DoH and DARD develop a disease-specific prevention and control action plan under the guidance of the Steering Committee of Diseases and Epidemic Prevention and Control.

"The prevention plan is made available at the beginning of the year, and when an outbreak emerges, the control plan is developed drawing on many factors, from the prevention to the epidemic status, scale; the plan is covered by the district budget or provincial budget. The provincial budget mainly covers spending on vaccines and the district budget covers injection service fees." (Officer, provincial DARD in Quang Tri province)

At the district level, planning for disease and epidemic prevention and control is done at the beginning of the year; however, given limited funding, an additional budget is allocated in cases of epidemic outbreaks.

Budget estimates are carried out following the Budget Law. The budgeting procedure follows the steps set out by MoH (Figure 3), which combines both top-down and bottom-up approaches. The timelines of budget estimation are as follows:

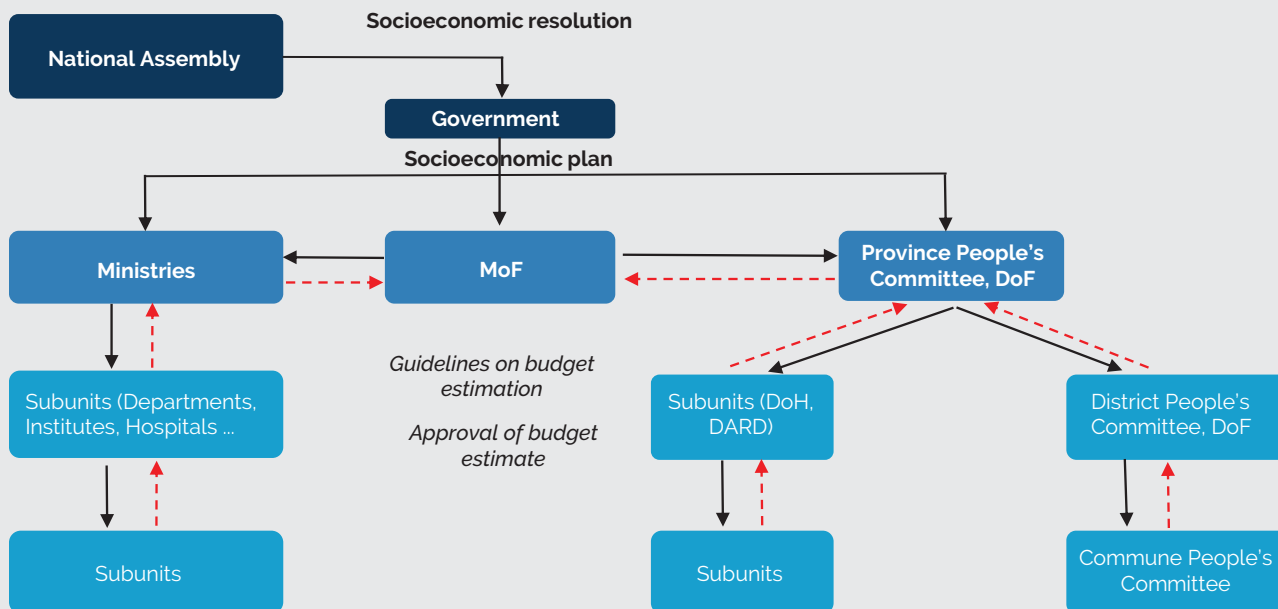
- June: The MoF issues a circular guiding the budget estimation
- October: The state budget estimate and central budget allocation plan are submitted to the National Assembly (NA) members
- By November 15: The NA decides on the state budget estimation and the principles for allocating a central budget to the central bodies and localities
- By December 10: The provincial People's Councils decide on the local budget estimates and provincial budget allocation plans
- By December 31: The budget estimates and budget allocation are finalized

When estimating the spending for the units involved in disease and epidemic prevention and control activities, the DoH and DARD set aside nonrecurrent funding in addition to recurrent funding. The budget estimates are projections of need at their lowest level.

"Every year, the health sector has a recurrent budget for response to unexpected outbreaks. The estimated funding is ensured at the minimum level and based on the historical amount of the previous year. When the contingency funding has not been allocated, the provincial DoH still allocates the funding for epidemic control from the annual budget in advance." (Officer, DoF, Quang Tri province)

Every year, the Prime Minister issues directives on the setup of socio-economic development plans and budget estimates for the following year. Based on these directives, the MoF issues a circular guiding the contents and notification of state budget estimates for (1) ministries and central agencies, and (2) provinces and centrally-administered cities.

Figure 3 Annual Planning and Budgeting Processes



At the central level, the MoH and MARD are the Level 1 budget planning units that directly receive budget estimates from the Prime Minister. They are responsible for allocating and assigning budget estimates to their subordinate units. At the local level, there are two levels: municipal budget and district budget. The DoF advises the provincial People's Committee on the setup of local budget estimates and allocates the budget to the units at the provincial and district levels for submission to the People's Council for approval. Drawing on the budget allocation decisions of the People's Committee, the DoH and DARD allocate budget estimates to their subordinate units.

The allocation of the reserve budget to the district level is not based on a specific budget estimate, but a per capita basis and the budget breakdowns are estimated subsequently. The budget estimates need to match the budget structure, and later, when finalized, the budget clearance shall also be made according to this budget structure. The budget structure is specified based on inputs such as human resources, public services, medicines, chemicals, and consumables rather than on specific activities. This was the main challenge in the survey

implementation since the data needed to be collected on activity-based expenditures according to the JEE 19 technical areas.

"Every year, there are plans to coordinate activities across the units but not related to money. There is no unit incorporating plans of the various ministries/ sectors; it is only implemented under national target health programs but not significant. There is no recurrent budget." (Officer, GDPM)

"There is no joint plan for disease and epidemic prevention and control across the three sectors: health, agriculture, and finance. However, the coordination amongst these three sectors is still very close, and the focal point is still the health sector." (Officer, DoF, Quảng Trị province)

In general, the approved budget estimate is always lower than the amount proposed by the units. This situation is relatively common, even at the central level. The budget estimates submitted by the units under MoH tend to get reduced at each level of appraisal.

"The actual need is much larger than the current financing source because of the large decrease in the



Photo courtesy of Dominic Chavez/The Global Financing Facility

level of external aid. The estimated budget is cut down at each level of appraisal. In many emergencies, it is not approved." (Officer, National Institute of Hygiene and Epidemiology (NIHE))

The level of approved funding depends mostly on the local budget capacity. The provinces with high revenues also have a higher probability of spending. For example, in Ho Chi Minh City, the budget for disease and epidemic prevention and control activities is estimated at the amount of 1.5–2.0 times higher than that of the previous year and allocated budget often not fully utilized.

"But the funding is cut down; proposal of VND 5 billion but only 2.5 billion is allocated. I do not blame them because they cannot balance. At least it could ensure the epidemic prevention and control." (Officer, DARD, Quang Tri province)

"The budget estimated for epidemic prevention and control is based on the previous year's budget spending

with an excessive estimate of 1.5–2 times higher; thus, the funding is not used up. This is to ensure that there is no shortage of funding in the event of an emergency." (Officer, District Health Center, District 8—Ho Chi Minh City)

The budget allocation to poor border provinces such as Quang Tri is relatively modest. This often proves a challenge for the implementation of health activities in general and disease and epidemic prevention and control in particular. The additional funding can only meet 10–15% of the funding need for professional activities in Quang Tri province. This province is in definite need of human resources for community-based surveillance due to its large geographical area and the potential complications related to its ethnic minorities. Accounting for 80% of the whole population, ethnic minorities have limited knowledge of disease and epidemic prevention and control. By comparison, rich provinces like Ho Chi Minh City have a good deal of financial resources for disease and

epidemic prevention and control from a variety of sources: national target programs, recurrent funding of the district People's Committee, and funding mobilized from the commune People's Committees. Particularly in the Health Center of District 8, the funding allocated for epidemic prevention and control in 2017 was VND 27.5 billion, and the epidemic prevention and control activities did not use up the estimated funding (estimated at 1 billion–1.7 billion). Also, each commune People's Committee, on average, contributed VND 30 million to epidemic prevention and control activities.

BUDGET MANAGEMENT AND IMPLEMENTATION

The management and allocation of funding are decentralized, according to the State Budget Law. The body responsible for allocating funding to subordinate units also manages and monitors the use of allocated funds in those units. The allocation of funding needs to comply with the principles, criteria, and norms promulgated by the responsible authority, i.e., the National Assembly Standing Committee. Even in case of emergencies, the process and procedures for the allocation of funding must still comply with the general provisions on estimation, appraisal, and approval of decentralized budget estimates. However, when it comes to implementation, there is room for flexibility, given the critical importance attached to epidemic prevention and control activities.

In cases of major outbreaks, the budget estimation process starts with the proposal made by the units, and the provincial People's Committee then assigns DoF to appraise and allocate the budget. In addition to allocating budget reserves to the local level to ensure their financial preparedness in case of epidemics, the funding mechanism allows timely response to epidemic prevention and control.

"In case of emergencies, the allocation is made without detailed estimates, and when the accountant requests. After the epidemic is stamped out, the financial clearance is to be verified. In case of emergencies, it is flexible in terms of budget. First of all, an advance is made, and then the clearance is made following the procedures of the Budget Law." (Officer, DoF, Hồ Chí Minh City)

"Besides, for the outbreak of epidemics, if the annual budget is not adequate, the Health Department shall estimate additional funding, and the Department of

Finance shall appraise and approve it. However, it rarely happens." (Officer, DoF, Quang Tri province)

"The sector should take the initiative in using the allocated funding immediately. Funding is allocated immediately when there is an outbreak." (Officer, DoF, Quang Ninh province)

In case of emergencies, funding must be allocated from the state budget to promptly respond to the need and to curb the epidemic in a timely manner. In Quang Tri province, the timeline for approval of additional funding for epidemic prevention and control is, on average, 15 days. In Quang Ninh, the average time is 7–10 days. Legislation stipulates a specific mechanism to mobilize funding from nonrecurrent budgets, additional budgets from the disease and epidemic prevention and control fund, and funding from the budget reserves available at different levels of local budget management.

"Districts are provisionally provided with an amount of funding from the district reserve fund to purchase priority medicines, and they are entitled to incur public debt. Then, needs should be submitted to the province. We are used to it, and thus do it, and debt settlement shall be made later; we cannot leave it undone." (District health worker, Quang Tri province)

"Epidemic prevention and control must be funded from the budget. There has been, so far, no external aid for epidemic prevention and control. Waiting for external aid will allow the epidemic to spread out. Nor can it [funding] be mobilized from other sources such as contributions by donors or people." (Officer, DoF, Ho Chi Minh City)

The procurement of assets must comply with the provisions of the Law on Public Investment and takes place through tender. In the case of epidemic outbreaks, procurement occurs through a quick and easy mechanism based on price quotations.

"Procurement of conventional assets must be centralized according to the recurrent procurement process. In case of emergencies, floods, and natural disasters, the procurement shall be carried out according to the quotation, other than the regular process of bidding." (Officer, DoF, Quảng Trị province)

The establishment of a budget reserve fund at all levels of budget management is an essential element

to ensure financial responsiveness in the event of health emergencies. There is always a reserve fund available that is only spent when an epidemic breaks out. At the central level, the reserve fund is managed by the MoF, and at the local level, it is managed by the People's Committee. In case of epidemic outbreaks or upon instructions, the reserve fund is allocated to health care activities. The ability to mobilize from the reserve fund largely depends on the total local budget expenditure that is closely correlated with the socioeconomic conditions of the province. The limited reserve fund imposes serious financial strains on poor or border provinces should an epidemic break out. The shortage of funds should be adjusted and supplemented promptly from the central budget.

"It is important to note that the city budget is large and thus the reserved funding is also large accounting for a substantial percentage of the total expenditure. However, such situations would lead to problems in some small or border provinces if a pandemic occurs; when the source of reserved funding cannot be adequate, prompt replenishment funding from the central budget will be needed." (Officer, DoF, Hồ Chí Minh City)

The decentralization of budget management can bring about difficulties for the health sector in advising on the financial resources of the entire sector for disease and epidemic prevention and control since the ministry cannot know the actual amount of funding allocated and used in local health units.

"Allocation of the fund provided by the central level to provinces/cities is not channeled through the ministry. When an epidemic breaks out, the ministry is assigned to respond to needs, but in reality, the ministry does not know to what extent the provinces are funded. The budget that the ministries allocate for epidemic prevention and control is often lower than the need. The need for the units is always higher than the allocated fund." (Officer, GDPM)

Most provincial units, especially the district health centers, are only allocated an adequate recurrent budget, while the level of nonrecurrent budget and funding for national target programs depends on the annual budget of the province. There is no fixed budget for epidemic surveillance and prevention activities. The budget does not specify the required rate of funding for the surveillance and control of infectious diseases. The units make their plans based on the available budget, and as a result, the consistency of epidemic prevention activities is significantly affected in the process. Health facilities that are assigned to prevent and control epidemics are not allocated budgets for epidemic prevention and control activities either but instead are paid directly when mobilization of resources is necessary to carry out epidemic prevention and control activities.

"It is difficult to acquire financial data in Vietnam as a matter of the sharing mechanism as well as the unaligned financing and budgeting systems." (Officer, OHP)

Expenditures on Health Security Activities

SOME MACROECONOMIC INDICATORS

Economic and political reforms introduced in the early 1990s have transformed Vietnam into one of Asia's dynamic economies today. Aided by sound economic fundamentals, the country has experienced sustained economic growth, leading to rising incomes—from \$596 per person in 1992 using constant 2016 prices to \$2,172 per person in 2016—and declining poverty—from 94 percent to 29 percent during the same period.

The economic growth rate in 2016 was 6.2%, which was slightly lower than the 6.7% growth rate of 2015 and the stated target of 6.7%. The drop was due to the combination of lower yield in agriculture due to drought and land salinization and lower production of oil (IMF, 2017). Despite this slight decline, the growth rate was still positive amidst the

unfavorable world economic context. Furthermore, agriculture production was expected to rebound and, accompanied by strong manufacturing activity and stable domestic demand, and the growth momentum remained robust.

Table 6 presents a set of indicators that reflect Vietnam's macroeconomic situation in 2016. Specifically, the proportion of government expenditure relative to GDP was quite high at 30%, budget deficit as a proportion of GDP was 6%, the public debt to GDP ratio was 65%, and health expenditure accounted for 9% of the government expenditure. The government is aware of limited fiscal space after years of high fiscal deficits—which has remained above 6% since 2012, and rising public debt—which has increased by 10% since 2013 (IMF, 2017). As a result, the government is planning to tighten the fiscal stance and implement an appropriate amount of fiscal consolidation. Fiscal adjustments include cutting public social and capital expenditures and tightening central control over provincial spending. In the face of ongoing reforms in fiscal consolidation, the availability of funds for government spending will thus be limited.

Table 6 Selected Macroeconomic Indicators, 2016

| Indicators | |
|---|---------|
| Government expenditure as a share of GDP | 30.2% |
| Total health expenditure per capita (2015) | US\$126 |
| Health as a share of government expenditure (2015) | 9.1% |
| Government revenue as a share of GDP | 24.5% |
| Government budget deficit as a share of GDP | 5.6% |
| Expenditure on development investment | 16.8% |
| Gross public debt as a share of GDP | 63.7% |
| ODA as a share of government revenue | 0.8% |
| Debt servicing (payment of principal and interest) as a share of government expenditure | 11.4% |

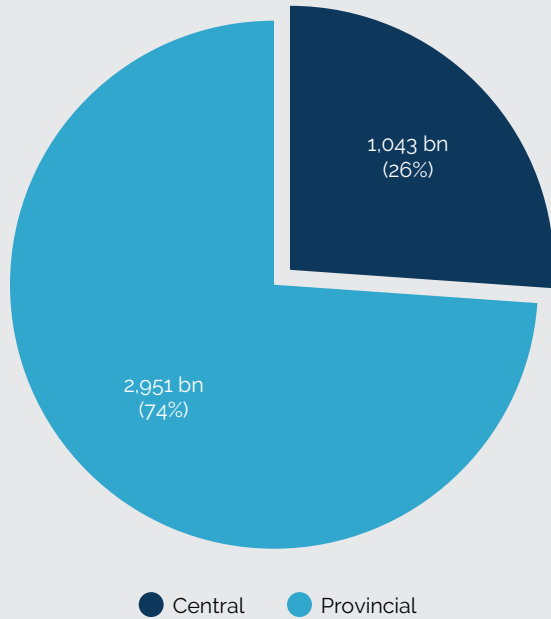
Source Annual state budget report, the website of the Ministry of Finance.

TOTAL HEALTH SECURITY EXPENDITURE

In 2016, Vietnam spent a total of VND 3,994 billion (equivalent of US\$181 million) on health security activities across the JEE 19 technical areas. This is equivalent to 0.09% of GDP and 0.29% of total government expenditure. In per capita terms, spending on health security was VND 42,757 (equivalent to US\$1.94). As presented in Figure 4, close to three-quarters of the total health security expenditure (74%) was incurred at the provincial level.

Vietnam is the first country that has conducted a comprehensive and systematic assessment of

Figure 4 Total Health Security Expenditure in Billion VND, 2016



in health security activities. As detailed in the JEE 2016 report, out of the total assessed 48 indicators, Vietnam scored four in eight indicators, three in 25 indicators, and two in 15 indicators. There certainly is a need for increased investment to at least shift the scores of two and three to a score of four, which signifies “demonstrated capacity” to enhance the IHR (2005) core capacities and capabilities.

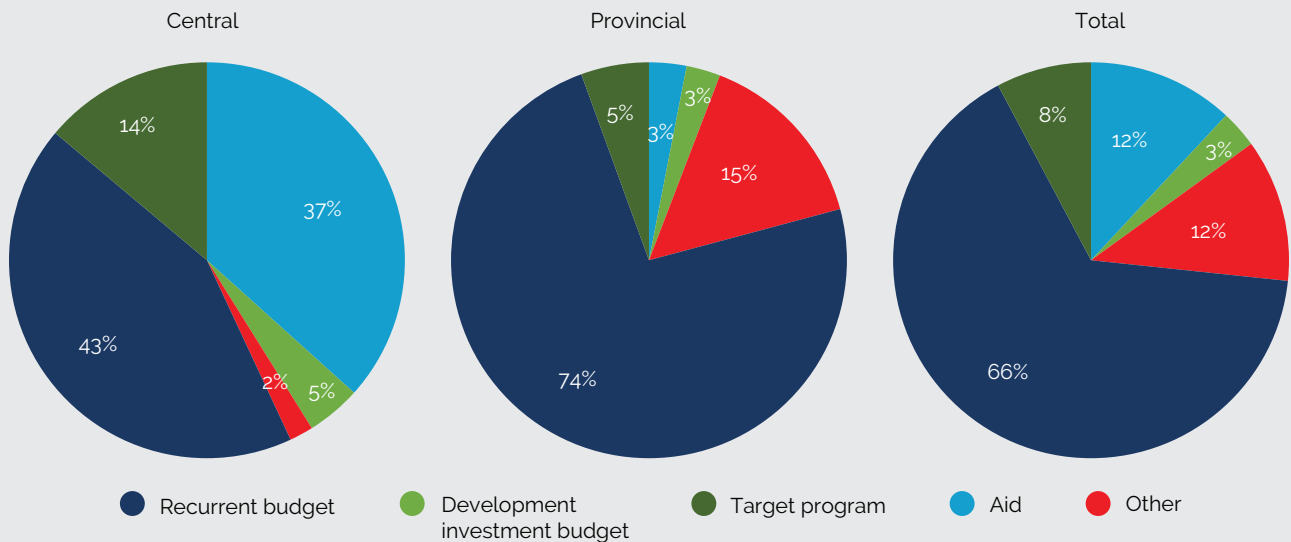
SOURCES OF FINANCE OF HEALTH SECURITY EXPENDITURES

Health security expenditures are financed mainly by the government through allocations for recurrent, investment, and national target programs followed by external aid. Government sources funded 77% of the health security expenditures in 2016, followed by external aid at 12% and others (including fees and charges) at 11%. Financing through recurrent budget allocation remains the single most important source of funding, accounting for 66% of the total health security expenditures. Figure 5 presents a further breakdown on the compositions of financing of health security expenditures at the central and provincial levels, as well as the overall total.

At the central level, the recurrent budget with 43% was the highest proportion of all categories of financial sources. Government, through its allocations for

expenditure on health security activities. At present, there are no other reference data points to compare these results with and ascertain whether the level of spending is adequate, high, or low. However, the JEE assessed capacities reflect a gap in current investment

Figure 5 Financial Sources for Health Security at All Levels, 2016





recurrent, investment, and national targeted programs, financed 62% of the health security expenditures, followed by external aid at 37%.

The government financed a total of 82% of provincial health security expenditures through its allocations for recurrent (74%), investment (3%), and targeted programs (5%). The national targeted program was small, partly because the 2016–20 NTHP was approved late, and no budget was allocated for 2016; and the spending units only used up the remaining budget allocated in 2015. External aid at 3% is an insignificant source of financing for health security activities at the provincial level. Revenues from fees and charges collected by health and agriculture units were presented as other sources, which financed 15% of health security activities at the provincial level, whereas it is negligible at the central level (2%). These fees and charges were additional revenues (not deducted from the recurrent budget), and they

were used for operational expenditures in provincial human and animal health departments. The funding under service contracts implemented by institutes and programs at the central level and implemented at the local level was also included in other sources.

HEALTH SECURITY EXPENDITURE BY IMPLEMENTING MINISTRIES

Out of the total health security expenditure at the central level, about 87% was incurred by the MoH. Figure 6 highlights the health security spending of the MoH and MARD across the JEE 19 technical areas for the year 2016. Immunization for the MoH (45%) and zoonotic diseases for the MARD (38%) stand out compared to spending on the rest of the JEE technical areas. The MoH's health security expenditure was also higher than the MARD's in areas such as the national laboratory system (15%) and workforce development

Figure 6 Health Security Expenditures by Implementing Ministries, 2016

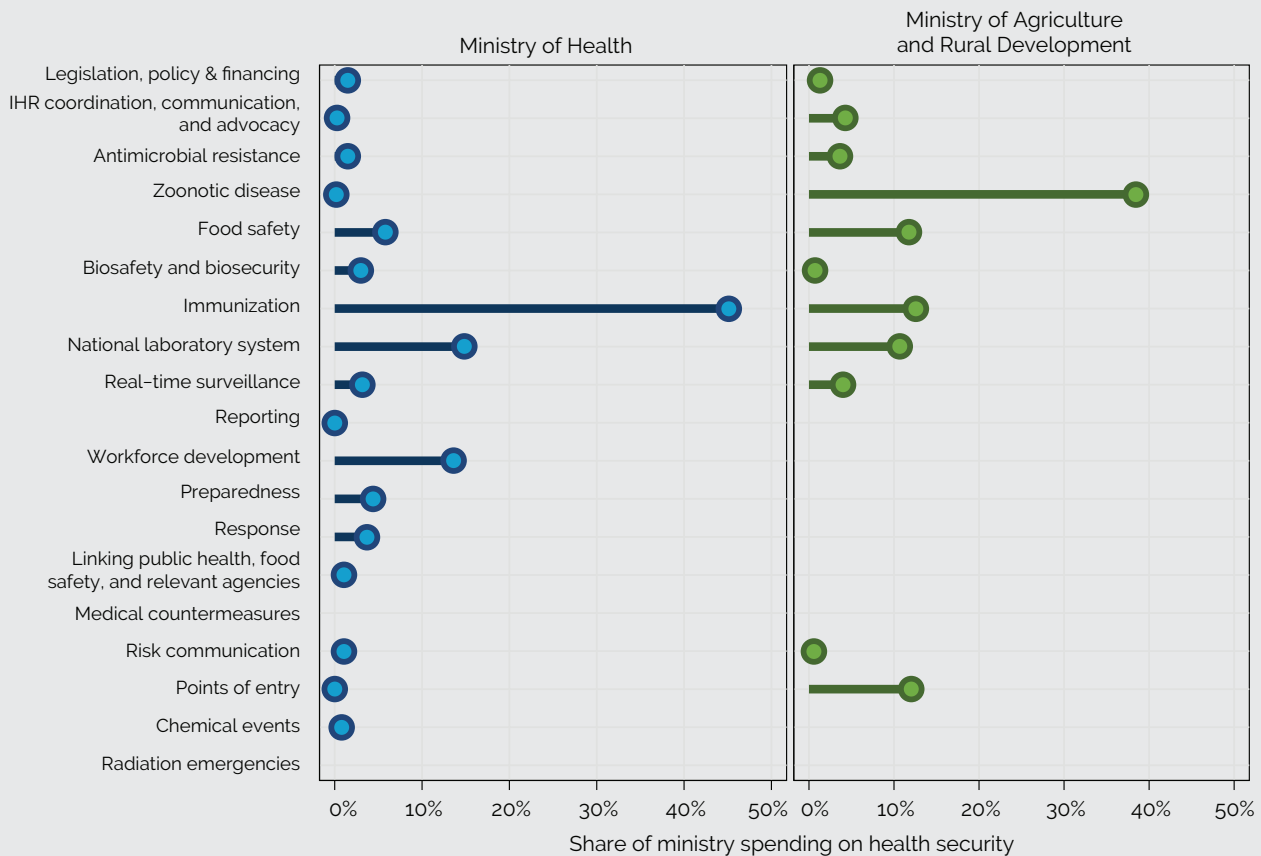
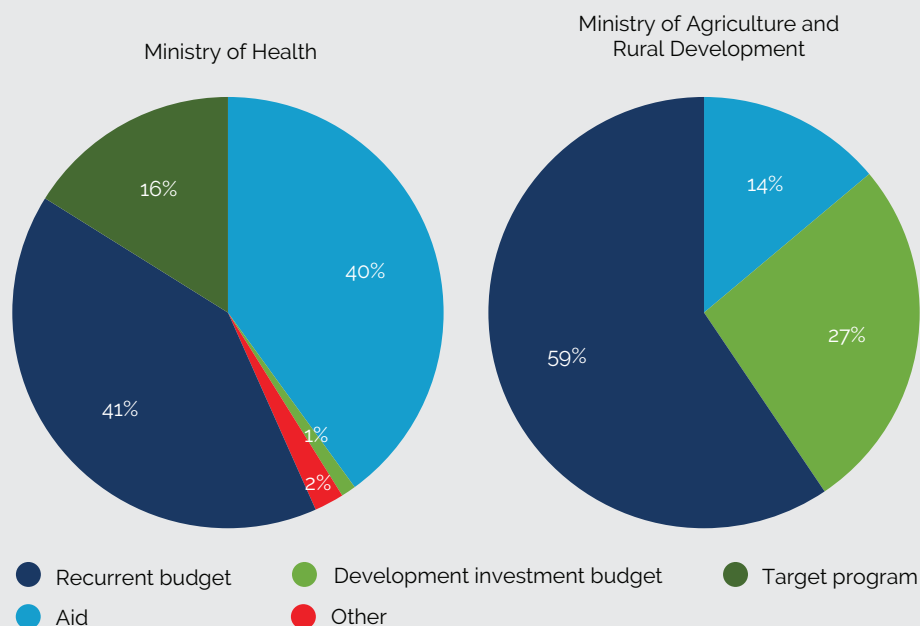


Figure 7 Financial Sources for Health Security by Ministry, 2016

(14%). Spending by the MARD was higher than the MoH in food safety and points of entry, each accounting for 12%. The level of expenditure in the remaining JEE areas accounted for 5% or less for both ministries, with no spending captured on medical countermeasures.¹⁶

The different sources of funding for health security activities implemented within the MoH and MARD are presented in Figure 7. The recurrent budget accounted for 59% for the MARD and 41% for the MoH. Similarly, the proportion of the development investment budget was substantially higher for the MARD (27%) than the MoH (1%). External aid was a significant financial resource for the MoH (40%) as opposed to just 14% for the MARD. National targeted programs only funded the MoH, financing 16% of the resources used in their health security activities.

HEALTH SECURITY EXPENDITURE BY JEE PILLARS

Figure 8 compares the central, provincial, and total health security expenditures by the four JEE

pillars—prevention, detection, response, and IHR related hazards and PoE. The panel graph reveals that spending on prevention activities was higher at both central (59%) and provincial (48%) levels in 2016. Expenditures on detection activities were higher at the central (29%) than at the provincial level (16%). Provincial health security expenditure on response activities, however, was much higher at 32% compared to 9% at the central level.

HEALTH SECURITY EXPENDITURE BY JEE 19 TECHNICAL AREAS, AND ADMINISTRATIVE LEVELS

Central, provincial, and total health security expenditure levels across the JEE 19 technical areas are presented in Figure 9. The highest expenditure at the central level was on immunization (41%), followed by the national laboratory system (14%) and workforce development (12%). Expenditure on medical countermeasures and personnel deployment was not captured in the survey. At the provincial level four technical areas—preparedness (21%), food safety (18%), zoonotic diseases (17%), and workforce

¹⁶ Part of the reason for zero expenditure on medical countermeasures is that stock piles were not included in the survey and data were not collected.

Figure 8 Health Security Expenditure by the JEE Pillars, 2016

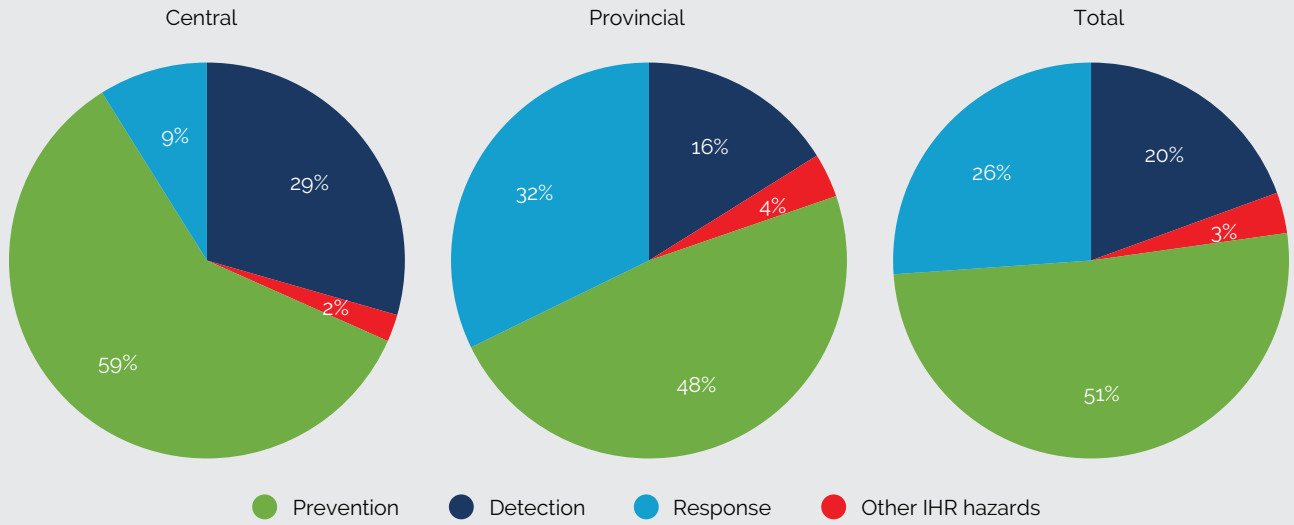
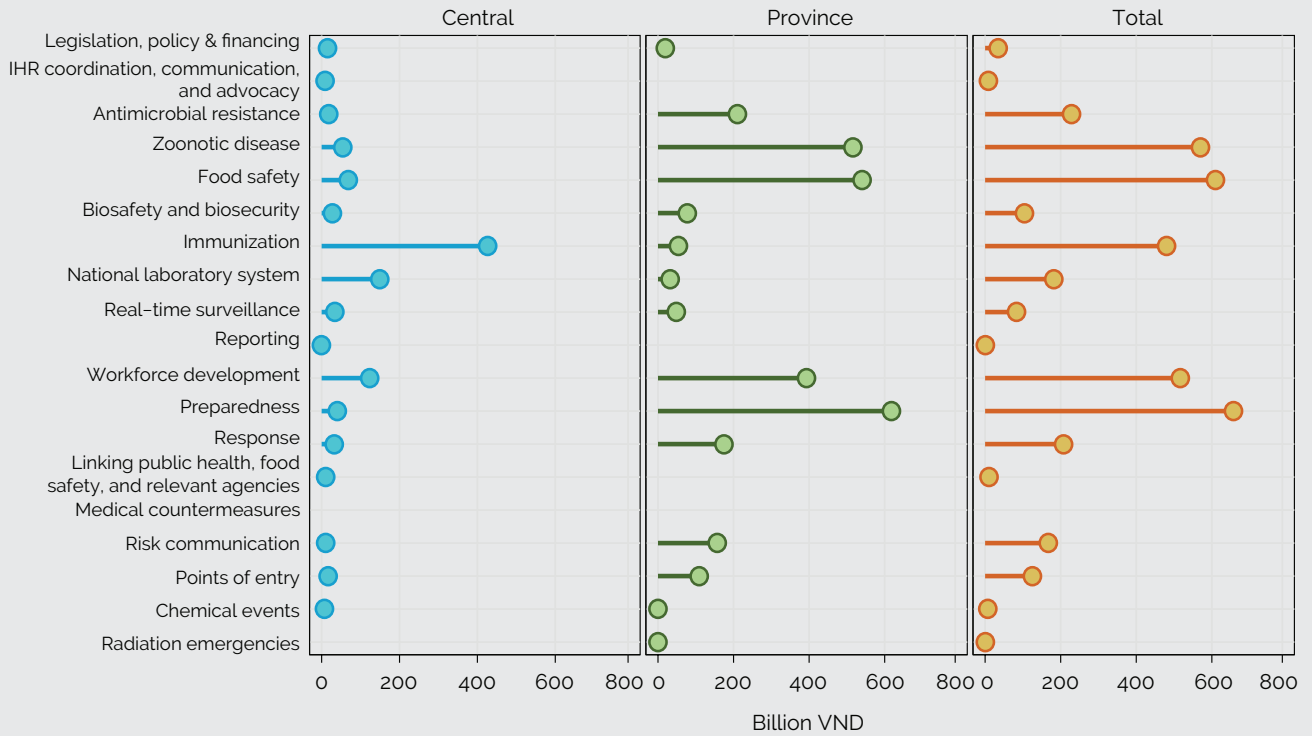


Figure 9 Health Security Expenditures by 19 JEE Technical Areas, 2016



development (13%)—account for over two-thirds of the total provincial health security expenditures.¹⁷

The combined spending on health security at both the central and provincial levels by the JEE 19 technical areas is shown in the third panel. Preparedness (16%) accounted for the highest proportion of expenditure, and it was followed by food safety, zoonotic diseases, workforce development, and immunization, each ranging between 12% and 15%.

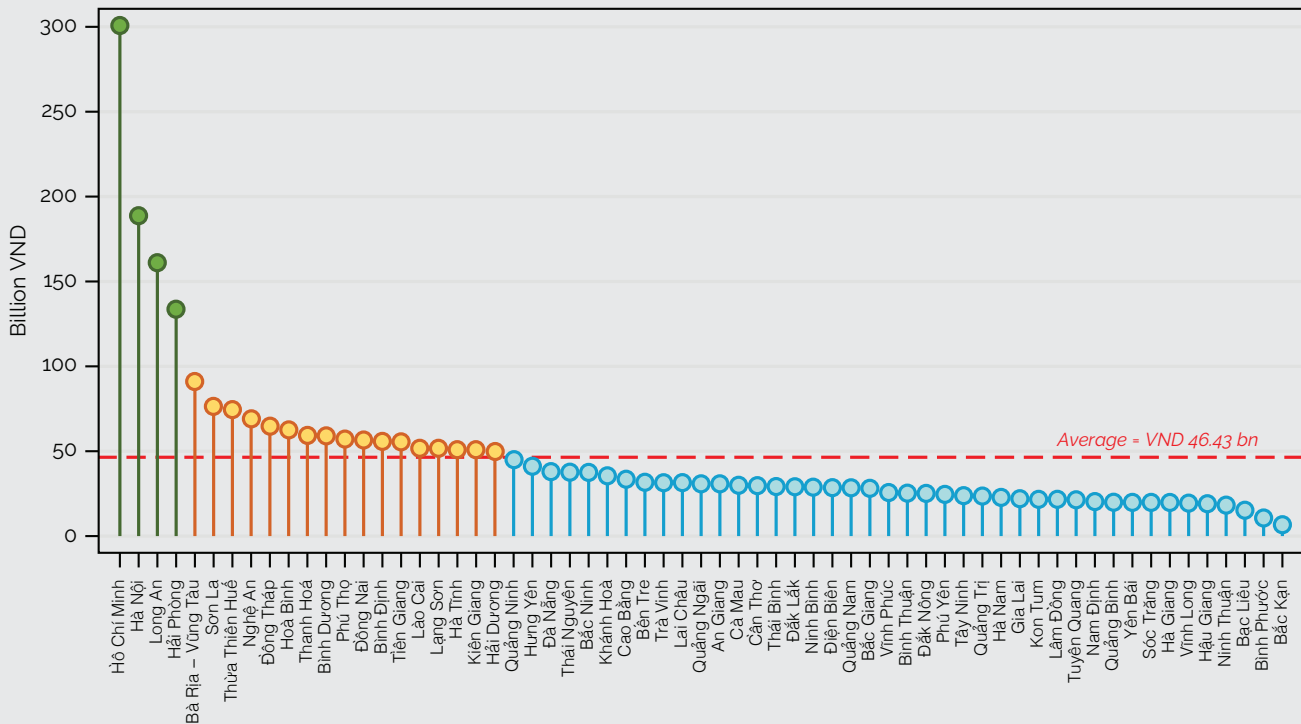
VARIATION IN HEALTH SECURITY EXPENDITURE ACROSS PROVINCES

The total health security expenditure at the provincial level was VND 2,951 billion, with an average per province of VND 46 billion. As depicted in Figure 10, there was a wide variation of health security expenditures across provinces, ranging from

VND 301 billion in Ho Chi Minh City to only VND 7 billion in Bac Kan Province. A third of the provinces' expenditures (21) were higher than the average amount. Border provinces tend to have higher spending on health security. This finding resonates with the fact that provinces with border checkpoints are at higher risk for public health events and disease transmission.

In-depth interviews raised the point that allocation of a budget for diseases and epidemic prevention and response is a function of provincial socio-economic conditions. However, there appears to be no clear correlation between the provincial per capita health security expenditures and provincial per capita GDP (Figure 11). Vietnam's poorest provinces, such as Son La, Dien Bien, and Lai Chau, tend to be mountainous and or border provinces and have the highest health security expenditure per capita. The budget for health security activities was most likely guaranteed

Figure 10 Health Security Expenditure by Province, 2016



¹⁷ Note that several areas did not have data reported by the provinces, such as the preparedness for response (59/63), antimicrobial resistance (51/63), emergency response (26/63—only provinces with epidemic outbreaks reported this expenditure category), points of entry (32/63—only provinces with border checkpoints reported this expenditure category).



from the central budget to support poor provinces actively involved in disease and epidemic prevention and response activities.

Self-financing provinces (richer provinces who managed to mobilize enough own revenue to fully cover their general expenditures) spend more on health security activities in per capita

terms (Figure 13). A province able to balance its own budget uses local budget revenues to cover local expenditures and also contributes to the central budget. There are at present 16 self-financed provinces out of 63, and there is a significant discrepancy in the level of health security expenditure between provinces that can balance their budget and those that cannot.

Figure 11 Per Capita Health Security Expenditure and Provincial GDP Per Capita, 2016

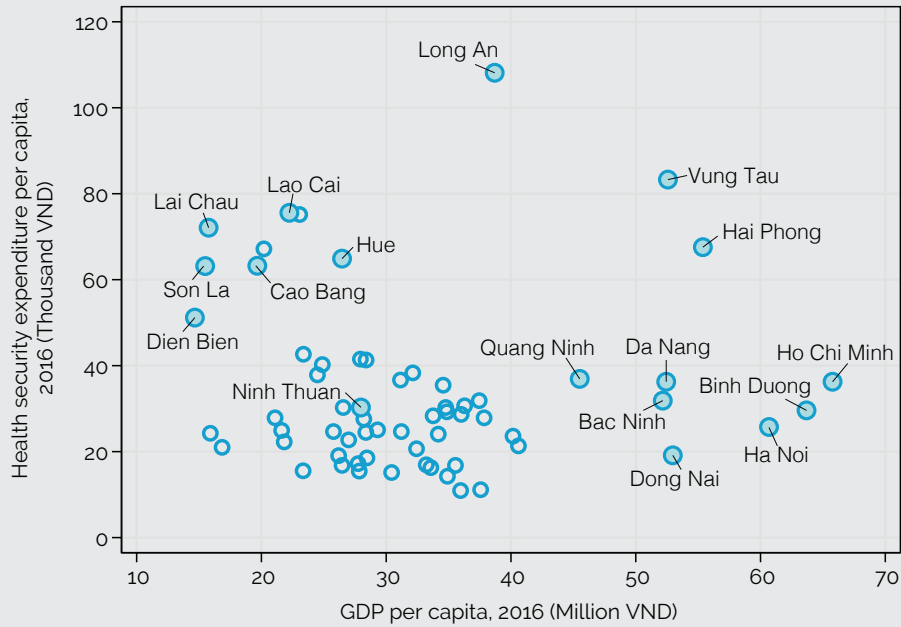


Figure 12 Health Security Expenditure by Self- vs. Non-Self-Financed Provinces, 2016

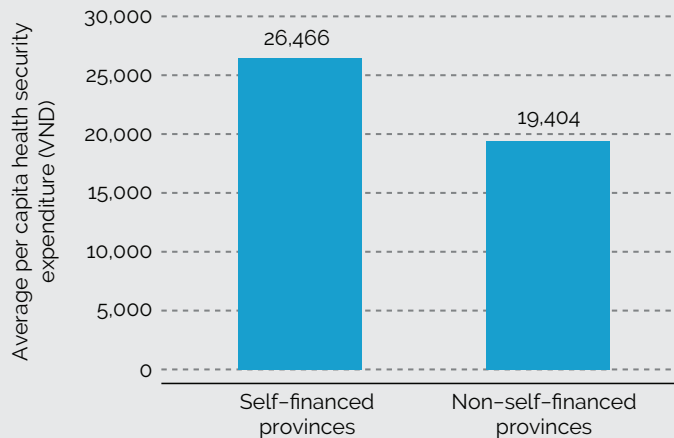




Photo by Motortion Films / Shutterstock.com



section four

61

CONCLUSIONS AND RECOMMENDATIONS



Vietnam is the first country to conduct a comprehensive and systematic assessment of investments in health security using the Health Security Financing Assessment (HSFA) tool. In 2016 Vietnam spent US\$181.2 million (US\$1.94 per capita) on health security areas with nearly 75% at the

provincial level. The Government financed 77% of health security expenditures, with external aid 12%, and miscellaneous fees and charges the remaining 11%. Preparedness accounted for the highest proportion of spending, followed by food safety, zoonotic diseases, workforce development, and immunization.





Conclusions

The primary source of funding for health security activities in Vietnam is the State Budget, including recurrent budgets, investment budgets, and the budget allocated to national target programs. Besides, during times of epidemic outbreaks, additional government funds are accessed, such as contingency funds, budget reserves, financial reserves, and national reserves (strategic stockpiles). The process of budget allocations for health security activities complies with the Budget Law and the decentralized management. In the case of epidemic outbreaks, the flexibility to ensure timely response to the epidemic is crucial.

The funding for response to epidemics is in accordance with various mechanisms at all levels of management. However, the budget for the normal function of the system in the absence of outbreaks, prevention, and preparedness is often not guaranteed and much lower than the demand. Also, the budget allocated to health security activities is significantly dependent on local economic conditions.

Almost all health security issues contained in the International Health Regulations (IHR) under the 19 JEE technical areas have been implemented, albeit performance has not been uniform across

areas. The food safety sector has a substantial legal basis for action, for instance, while others have not been put in place. The GDPM is designated as the national IHR focal point. A national epidemic prevention plan has been developed for the provinces as well as emergency response operations plan. Multisectoral steering committees at all governmental levels constitute the key interdisciplinary coordination mechanism throughout the country. Workforce training and retraining has been conducted to improve health security efforts.

Vietnam has made substantial progress towards implementing the One Health approach in addressing threats from zoonotic diseases. A One Health Partnership for Zoonoses office was established, the MoH and the MARD have prioritized surveillance building on the H5N1 Avian Flu outbreak response. An indicator-based and sentinel surveillance system is in place for specific priority monitored diseases.

The country has been actively engaged in combatting AMR. A national system of laboratories at both central and provincial levels is organized to conduct confirmatory testing of infectious disease pathogens. As a Global Health Security Agenda country, engagement with international organizations and development partners has assisted in strengthening the health security.

Recommendations

The 2016 JEE has identified several technical areas with scores of 2 (limited capacity) and 3 (developed capacities). Vietnam achieved a high score of 4 in 8 indicators, but the remaining 40 indicators were scores of 2 (15 indicators) and 3 (25 indicators). There is a need for increased investment to enhance the low hanging core capacities and capabilities to a JEE score of 4, which signifies “demonstrated capacity”. It is vital that the Vietnam IHR Master Plan (2019–15) obtain adequate funding for its implementation.

Many priority investment areas for health security are common to broader public health systems, such as strong surveillance capacity, good laboratory network, effective infection prevention control, strong preparedness capacities, and health workforce development. It is, therefore, crucial to consider health security capacities and financing for health security within the broader health systems strengthening, as well as the broader domestic resource use and mobilization effort.

There are needs to: improve and effectively plan and allocate funding; better integrate disease surveillance by geographical area; enhance information on coordination, funding sources

and outcomes for each health security activity; integrate into planning other sectors such as agriculture and tourism; and gain greater in-depth understanding at the central level of the actual workload and budget in subordinate units.

Health security activities are highly interdisciplinary and require close cooperation and effective coordination across ministries and sectors. There is a need to put in place better and more effective mechanisms to enhance information sharing and coordination across the various sectors. The government's actions in directing the health and veterinary sectors to cooperate closely should be continued and strengthened.

International organizations and development partners play an essential role in health security activities, especially in some areas such as IHR coordination, antimicrobial resistance (AMR), national laboratory system, and real-time surveillance. The Vietnam Government needs to take firmer leadership in the coordination of aid resources. Engagement of the private sector in health security activities is a missed opportunity, one which the public and private sector should explore going forward.



Photo courtesy of Vietnam - Livestock Competitiveness and Food Safety Project, the World Bank



Photo courtesy of the Ministry of Health, Vietnam



annex 1

67

VIETNAM: A CASE STUDY ON FINANCING THE RESPONSE TO H5N1 OUTBREAKS, 2003–06

Introduction

The highly pathogenic avian influenza (HPAI), the H5N1 strain, first occurred in poultry, then in humans at the end of 2003 in Vietnam. Response efforts were implemented in subsequent years to control three significant waves of H5N1 outbreaks, all of which occurred during the traditional/lunar New Year period.

Before the H5N1 outbreak, Vietnam had experienced a massive increase in poultry at an annual rate of 9.1% (from 133 million in 1993 to 254 million by 2003). The increase was due to a growing demand for animal protein in the country due to a larger population, which rose from 72 million in 1993 to 82 million in 2003, and also because of higher incomes. The growing demand for poultry in Vietnam was partially met by imports, with imported poultry accounting for about 10% of the total poultry products by 2003. However, the increased poultry farming and imports were not matched by an increase in surveillance and disease management capacity. The challenge was particularly magnified because of the context of poultry farming in Vietnam, i.e., 95% out of around

8 million households engaged in poultry farming owned less than 50 live birds. Poultry farming over such an expanse and at such a small scale undoubtedly stretched the disease prevention and preparedness capacity.

Vietnam's responses to the three major outbreaks have fostered valuable lessons on how best to tackle HPAI, as well as other epidemics and emerging diseases. Some of the key achievements and lessons learned include strong political commitment and support, improvements in multi-sectoral strategy and collaboration, technical advances in surveillance systems, and capacity building for laboratory systems and human resources, among others.^{18, 19} Vietnam's success in mobilizing resources, particularly financial resources for dealing with the HPAI pandemic, was a crucial element that had not been well documented. This case study aims to outline the salient features of the H5N1 outbreaks during 2003–06 and shed light on the lessons drawn from financing mechanisms for preparedness and response.

¹⁸ The Vietnam integrated national operational program on avian influenza, pandemic preparedness, and emerging infectious diseases (AIPED) 2011–2015.

¹⁹ FAO. 2016. Combatting avian influenza in Vietnam, the 8-year-long collaboration.

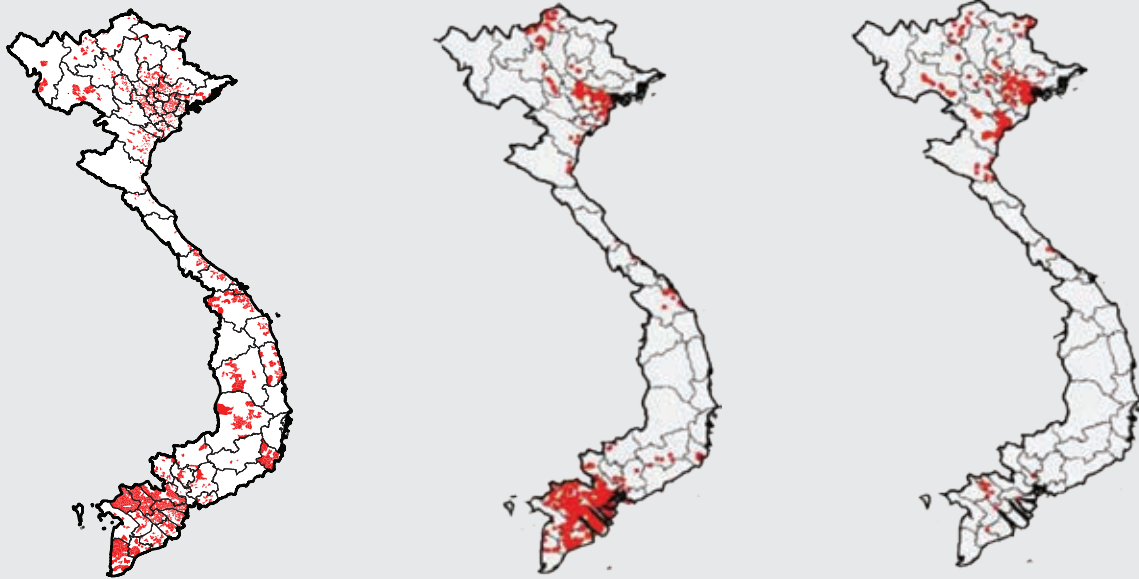


Description of Avian Influenza in Vietnam, 2003–06

The H5N1 strain was first detected in poultry in Vietnam in late 2003, and after that, the virus spread quickly in various poultry flocks and to humans. The cases of influenza in humans and poultry peaked during 2004–05 and started to subside from 2006 onward. There were three major

outbreaks of highly pathogenic influenza A(H5N1) between 2003 and 2006, and all three occurred during the lunar New Year (see Figure A1 for additional information). A total of 93 cases of human influenza H5N1 were detected, with 42 deaths, which is a 45% fatality rate.

Figure A1 Spatial Distribution of Avian Influenza, 2003–06



- 1st wave from 12/2003 to 02/2004, peak in Jan 2004
- Over 45 million poultry and 13 million quails culled. Sharp decline in poultry — 26% less in South and 19% less in North against 2003
- Outbreaks widespread across the country — 2,574 communes, 381 districts, and 57 of the 64 provinces and municipalities
- High concentration in the Red and Mekong river deltas, high poultry density areas
- 2nd wave from 12/2004 to 03/2005, peak in Jan 2005
- 2 million poultry dead or culled
- Outbreaks in 670 communes, 182 districts, and 36 of the 64 provinces and municipalities
- High concentration in Mekong river deltas, where the water fowl density was high
- 3rd wave from 11/2006 to 04/2007, peaked in Dec 2006
- Outbreaks in 305 communes, 108 districts, and 24 of 64 provinces and municipalities
- Mostly concentrated in the North
- Avian influenza virus clade 1 is dominant

Note The boundaries, colors, denominations and other information shown on any map in this work do not imply any judgement on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

The measures to control the outbreaks that were implemented in the period between late 2003 and July 2005 included the following: (i) strengthening monitoring and surveillance; (ii) promptly culling poultry in infected and at-risk flocks; (iii) enhancing control over the transportation and disinfection of poultry farms with infected poultry; (iv) banning the hatching of all waterfowl eggs; (v) closing live poultry markets in inner cities and towns; and (vi) providing timely and accurate information to raise awareness about the matter.

Following a successful vaccine trial, additional measures to vaccinate poultry were implemented from August 2005 onward. A total of 33 provinces and municipalities in the Red River Delta and the Mekong Delta were identified as high risk. Eligible for vaccination during the campaign were domestic poultry farmed by households on various scales. In 2005, 166.3 million doses of vaccine were administered to chickens and 78.1 million doses to ducks. In 2006, 368 million doses were administered to chickens and ducks (two rounds of vaccinations).

CONSEQUENCES

During 2003–06, about 51 million poultry were culled²⁰, and the number of rural households directly involved in poultry production went down by 50%. There are several estimates on the economic impact of the H5N1 outbreaks during 2003–06 in Vietnam, ranging from US\$176 million²¹ to about US\$450 million or 1% of national GDP in total direct loss for the poultry sector.²² In 2004 alone, the direct economic losses incurred by the influenza pandemic were estimated at around 0.5% of GDP (World Bank, 2004).²³ Specifically, 8 out of 11 million households in Vietnam bore the brunt of these losses. The extent of damages was unevenly distributed across different scales of poultry farming and breeding egg-laying hens. In general, the poor were among the most severely affected groups.

Across the three outbreaks, the spread of the HPAI virus to humans resulted in a total of 93 cases of human influenza H5N1, out of which 42 were fatal. Besides, damages to relevant service sectors such as the travel and tourism industry were not adequately estimated.

²⁰ The Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED) 2011–2015.

²¹ McLeod, et al., 2005. Socio-economic impacts of avian influenza. Intervention at Donor Meeting in Geneva. Rome, FAO.

²² The World Organization for Animal Health. 2007. Prevention and control of animal diseases worldwide: Economic analysis—Prevention versus outbreak costs.

²³ World Bank (2004). Technical annex for a proposed credit of SDR 3.5 million (US\$5 million) to Vietnam for an avian influenza emergency recovery project. World Bank, Rural Development and Natural Resources Sector Unit East Asia and Pacific Region.

National Preparedness and Response to the Avian Influenza Outbreaks of 2003–06

The Government of Vietnam mobilized the entire country and called for support from the international community toward the prevention, control, and preparedness for response to the pandemic. The ensuing activities were classified into three major groups: (1) preparedness for national response and coordination; (2) control measures of highly pathogenic avian influenza in poultry (agriculture and animal health sectors); and (3) prevention of and preparedness for response to influenza outbreaks in humans (human health sector). The government issued 12 official documents outlining the prevention and control of the epidemic.

PREPAREDNESS FOR NATIONAL RESPONSE AND COORDINATION

The Government released - a Vietnam: Integrated National Plan for Avian Influenza Control and Human Pandemic Influenza Preparedness and Response 2006 – 2008, Red Book²⁴ - for responding to avian and human pandemic influenza; and - Vietnam: Integrated National Operational Program for Avian and Human Influenza (OPI) 2006–2010, Green Book²⁵ - to control the avian influenza pandemic and ensure preparedness for response to human influenza between 2006–08. The national strategies outlined clear objectives and measures, activity coordination, and estimates of required financial resources. Drawing on the national plans, each relevant ministry, such as agriculture, health, and environment, developed its plan of action.

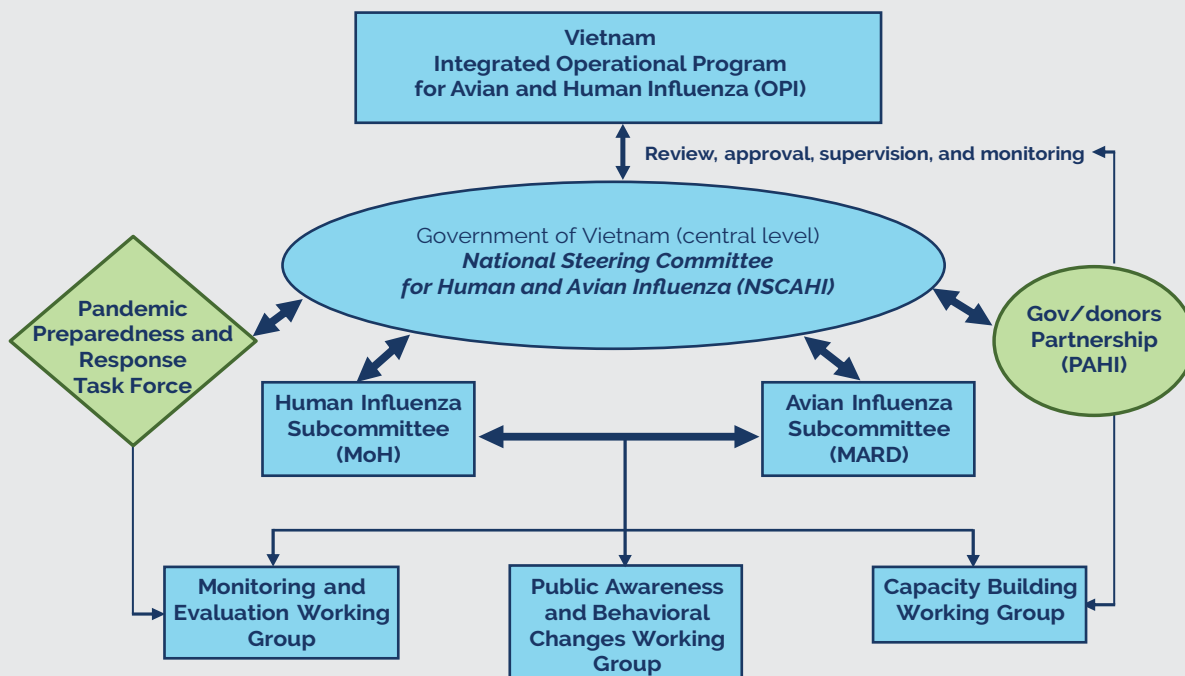
SETTING UP MECHANISMS FOR STAKEHOLDER COLLABORATION AND ACTIVITY COORDINATION

In preparation for coordinating the activities taking place at both national and local levels, the Prime Minister set up the national steering committee for Avian and Human Influenza. The government promulgated the rules surrounding the activity coordination at the national level, while the provinces, districts, and sectors set up their local steering committees to coordinate the avian influenza responses. Also, the government and donors established a Vietnam Partnership for Avian and Human Influenza (PAHI) Group to mobilize resources and to increase the effectiveness of ODA use and the coordination of stakeholder responsibilities. Consisting of UN agencies, governmental and non-governmental organizations, and entrepreneurs and associations under the leadership of the national steering committee, the Group facilitated dialogue with donors, advised on ODA priority allocation, conducted monitoring and evaluation of activities, and shared experiences with other countries. Figure A2 shows the mechanism for coordinating response activities.

Effective coordination was critical in controlling avian influenza. Even though the central level coordination framework (Figure A2) was set up during 2004–05, the mechanism of mobilizing foreign aid only became effective by mid-2006 when the Green Book was adopted. The same mechanism has been employed for other emerging diseases in Vietnam.

²⁴ A report of the Socialist Republic of Vietnam prepared with the support of the World Bank and the United Nations Country team.

²⁵ The Green Book was developed by a task force established under the direction of the national steering committee and coordinated by MARD, with 12 members representing 11 ministries (MARD, MOH, Ministry of Public Security, Ministry of Transport, Ministry of Industry and Trade, Ministry of Foreign Affairs, Ministry of Culture and Information, Ministry of Science and Technology, Ministry of Natural Resources and Environment, Ministry of Planning and Investment, and MOF). The task force received significant support from various international organizations such as WHO, FAO, UNDP, United Nations International Children's Fund, and the World Bank.

Figure A2 Coordination Framework at the Central Level

CONDUCTING SIMULATION EXERCISE ON INFLUENZA PREVENTION AND CONTROL

Several simulation exercises on influenza prevention and control with different ranges of pandemic-scale situations and different conditions to improve the implementation and coordination capacity of the stakeholders were conducted. Also, the coordinated simulation exercise helped draw lessons for any adjustment of the national action plans.

CONTROL MEASURES OF HIGHLY PATHOGENIC AVIAN INFLUENZA IN POULTRY

The plan to control highly pathogenic avian influenza in poultry consisted of three phases: control (2005–07), consolidation (2008–10), and elimination (after 2010). The strategy for control and elimination of the highly pathogenic avian influenza, developed by the Ministry of Agriculture and Rural Development (MARD), focused on five aspects: (1) capacity building in the animal health sector; (2) disease and pandemic control; (3) surveillance and epidemiological investigation; (4) restructuring of the poultry farming sector; and (5) awareness-raising activities and behavioral change.

CAPACITY BUILDING

The capacity-building measures that were implemented in the animal health sector included improving the capacity of the animal health laboratory network, providing epidemiological surveillance skills to veterinary staff, improving disease and epidemic reporting, and investing in data analysis and capacity building for veterinary management. As a result, the capacity of the animal health sector significantly enhanced, as documented by in-depth interviews and assessments of the OIE conducted in 2006 and 2010.

DISEASE AND PANDEMIC CONTROL

The disease and pandemic control measures included providing swift identification and timely responses to outbreaks, conducting vaccination services in high-risk areas, exerting greater control over poultry handling and transportation, and designating areas free of epidemic and disease. With vaccination being an essential component of the disease and pandemic control program, the MARD developed a detailed vaccine plan that included importing vaccines, training staff, ensuring timely communication, and providing



financial support. In 2004–06, there were over 25,000 sessions of training provided to veterinary staff from all provinces, districts, and communes. The training focused on responses to avian influenza outbreaks, including humanitarian culling, use of protective measures, and safe poultry disposal by burial.

To control the influenza epidemic in its first phase (2005–06), the MARD approved of a Vaccine Use Project that required an allocation of US\$15.3 million to procure vaccines and conduct the vaccination campaign. A trial vaccine was first administered in Nam Dinh and Tien Giang provinces between August and October 2005. The mass vaccination campaign was then rolled out in high-risk provinces during subsequent months. By the end of 2006, 300 million avian influenza vaccine doses had been administered, and over 350,000 serum samples had been obtained from poultry to ascertain the immunological responses after receiving a vaccine.

Working groups were set up with the task of investigating the epidemic status and reporting suspected cases to the local governments. It was decided that all poultry in the flocks would be culled if the clinical investigation detected symptoms of the disease.

Controlling poultry handling and transportation was essential for controlling the disease. A member of the national steering committee on HPAI Control and the Ministry of Transport issued a decree requesting no poultry should be transported out of infected areas. The roads surrounding the areas with detected outbreaks were blocked for 21 days.

EPIDEMIOLOGICAL SURVEILLANCE AND INVESTIGATION

A total of nine courses on outbreak investigation and 200 sessions of training in applied veterinary epidemiology were taught to veterinary staff in all provinces and districts nationwide. The epidemiology surveillance training consisted of both clinical and laboratory surveillance. The clinical surveillance program played a crucial role in monitoring avian influenza. Given that the early warning system was set up based on the village's surveillance system, the veterinary staff at the grassroots level actively engaged in conducting field surveillance in villages. Once suspected cases of avian influenza H5N1 cases were detected, the veterinaries would report them

to the district veterinary station, and an investigation would follow.

To improve the management of information related to emerging diseases, especially the highly pathogenic avian influenza, the FAO Emergency Center for Transboundary Animal Diseases (ECTAD) Vietnam was set up in early 2006. Drawing on telecommunication technology and mapping software capacity provided by ECTAD, provinces were able to update the status of the epidemic daily.

The laboratory capacity was strengthened. Before the 2003–04 outbreak, no laboratories in Vietnam were able to diagnose avian influenza. However, since the emergence of the epidemic, the available laboratories in Vietnam received international support. The National Center for Veterinary Diagnosis received support from the CDC while the Ho Chi Minh City Regional Center for Veterinary Diagnosis was provided technical expertise from the Australian Animal Health Laboratory. As a result, nine national and regional laboratories were able to diagnose avian influenza through various methods.

RESTRUCTURING THE POULTRY FARMING SECTOR

Restructuring of the poultry farming sector was a significant component of the Agriculture and Rural Development Strategy 2001–10 and also part of the long-term avian influenza control plan. The MARD also approved the Master Plan on "Restructuring of Poultry Farming Sector for the Period 2006–10." Poultry raising in the inner cities and towns was strictly prohibited during 2004–06, while commercial and semi-commercial poultry farms and incubation facilities were required to move out of residential areas.

The sale of live poultry in urban markets was strictly prohibited during the epidemic period. Selected markets and poultry slaughterhouses were provided with infrastructure upgrades, whereas selected poultry farms were upgraded in terms of biosafety.

AWARENESS-RAISING ACTIVITIES AND BEHAVIORAL CHANGE

The Agricultural Extension Center was responsible for raising public awareness of avian influenza in Vietnam.

The first target group in the agriculture sector included poultry farming and trading households. Campaigns were launched to raise public awareness of avian influenza prevention and control, whereas civil organizations such as the Farmers' Association, Fatherland Front, the Youth Union, and the Women's Association Society actively engaged in epidemic prevention and control activities. At least one "Action Month Against Avian Influenza" was organized annually during 2004–06. Over 500,000 posters and 70,000 leaflets on avian influenza prevention and control were published and disseminated in all provinces and municipalities. The media also actively participated in raising public awareness with national and local radio stations launching a series of articles and news on disease prevention and control and providing regular newspaper coverage of the epidemics.

PREVENTION OF AND PREPAREDNESS FOR RESPONSE TO INFLUENZA OUTBREAKS IN HUMANS

Developed by the Ministry of Health (MoH), the strategy for the prevention and preparedness for avian influenza and human pandemic influenza consisted of the following components: (1) strengthening surveillance and response; (2) strengthening diagnosis and treatment capacity; and (3) raising public awareness.

STRENGTHENING SURVEILLANCE AND RESPONSE TO INFECTIOUS EPIDEMICS

Five key activities were implemented. First, the early warning and response system was established. Second, quick response teams were set up to assist in investigating and dealing with the epidemic. Third, field epidemiology training was provided to epidemic surveillance staff. Fourth, the legal documents related to the epidemic prevention and control were amended. And fifth, the capacity of quarantine/border health was enhanced.

Strengthening the capacity of staff in preventive care facilities from communes to provinces was a key priority. Over 3,000 provincial and district health workers were given training on standards for surveillance, sampling, and transport of specimens.

A total of 55 training courses on early warning awareness and response system implementation were offered to preventive care workers at the province level, and 44 training courses on technology transfers and real-time polymerase chain reaction testing system use skills were implemented in 32 provinces. About 7,000 health workers received field epidemiology training between 2006 and 2010, along with the setup of a field epidemiology training program. A software application for the surveillance of infectious diseases was developed and tested, and there were weekly reports on the epidemic using the video conference system linking the GDPM and the four national/regional Pasteur, and Hygiene and Epidemiology Pasteur Institutes.

STRENGTHENING DIAGNOSTIC CAPACITY

The NIHE laboratories and the Ho Chi Minh City Pasteur Institute were upgraded to national testing laboratories that met the standards of biosafety Level 3 and were capable of testing advanced virology. Altogether 32 provincial preventive medicine centers and ten central and regional hospitals were also upgraded to Biosafety Level 2, allowing them to conduct basic PCR testing. Investments in diagnostic capacity enabled five central hospitals with numerous cases of suspected influenza cases to conduct "PCR Real-time" testing. Laboratory staff were provided training on testing techniques, biosafety practices, and procedures for sampling and transporting samples.

STRENGTHENING OF MEDICAL SERVICE CAPACITY

Measures for the strengthening of medical service delivery were implemented based on the possibility of an epidemic outbreak or a pandemic outbreak. A series of activities were undertaken towards strengthening service delivery, such as conducting the inventory of the entire medical service system (total number of beds, capacity of emergency admissions, staff capacity, equipment); enhancing the care services for influenza patients; upgrading health facilities and equipment (emergency rooms, ventilators, portable X-ray machines, installation of central oxygen delivery systems, and specialized vehicles for patient transportation)²⁶; and coordinating

²⁶ MoH "Decision No. 38/2005/QĐ-BYT on the National Plan of Action on Human Influenza Pandemic Preparedness in Vietnam."



the production, procurement, and distribution of Tamiflu and Oseltamivir.²⁷

Thousands of health workers at the province and national levels were trained on the new guidelines for the diagnosis and treatment of influenza. Medical equipment was provided to province and district hospitals for the transportation and management of patients with respiratory failure. Quarantine areas in key hospitals were enhanced with better nosocomial infection control. Diagnostic and treatment guidelines for influenza A(H5N1) were printed and distributed to health facilities. Twenty-three training courses on the use of ventilators were provided to 720 health workers who were directly in charge of hospital equipment.

PREPAREDNESS OF MEDICAL RESPONSE TO EPIDEMICS SCENARIOS

During the epidemic, the MoH assigned eight central hospitals to be the main health care facilities for treating avian influenza patients. Provincial hospitals treated mild cases of influenza and occasionally admitted severe influenza cases that had been referred by central hospitals due to an overload. District hospitals provided basic treatment for mild cases of influenza. Even though it is impossible to predict the timing and magnitude of a pandemic, Vietnam prepared a response schedule based on the scenario in which the number of patients would exceed the hospital's capacity. In this scenario, all hospitals had to effectively plan their human resources and infrastructure to deal with an influx of patients. Under the direction of the Provincial People's Committee, there were plans to set up field hospitals nationwide that would be supported by logistics warehouses and supply of equipment and medicines as had happened during the war.^{28, 29}

Other epidemic preparedness and response measures included conducting 50 simulation exercises at the

provincial level, setting up 10 epidemic control teams under the MoH, strengthening mobile epidemic control teams under NIHE/Pasteur Institutes and at the provincial level, as well as distributing medicines and chemicals to localities where prevention and control of the epidemic were key priorities.

COMMUNICATION AND RAISING PUBLIC AWARENESS

Measures to improve communication included providing updates on the threats of disease nationally and worldwide, and mobilizing support from organizations, associations, and public security forces in the fight against epidemics. The following communication channels were used:

- Enhancing the dissemination of news and messages, and the dissemination of knowledge in 10 ethnic languages on Vietnam national television and in the mass media.
- Directing the Health Communication and Education Centers in 63 provinces to develop communication contents and to distribute leaflets and posters to households.
- Reporting weekly to the government on the status of the epidemic and the preventive and control activities that were being implemented.
- Sharing information about the epidemic on the MoH's website.

RESEARCH

Hospitals and research institutes such as NIHE, the Pasteur Institute, the Hospital of Tropical Diseases, the National Hospital of Pediatrics, and the Institute of Vaccine and Medical Biologicals were undertaking collaborative research on HPAI and influenza epidemics. Virology, epidemiology, epidemic control measures, and vaccine development were among the key research topics.

²⁷ The Government "Decision No. 297/GDD-TTg on the establishment of the national steering committee for Human Influenza Control."

²⁸ Party Central Committee Secretariat "Directive 53-CT/TW DATED 28/10/2005 on implementing urgent measures to prevent avian influenza (H5N1) and pandemic influenza in humans."

²⁹ MARD "Decision No. 3400 QD/BNN & PTNT on emergency preventive plans for highly pathogenic avian influenza control in Vietnam."

Financing the Response to the 2003–06 Avian Influenza Outbreaks

To implement the “National Prevention Plan in Response to Avian Influenza Pandemic and Human Influenza” and the “National Joint Plan of Action on Avian Influenza Pandemic Control and Preparedness for Response to the Human-affected Pandemic 2006–08” financial resources were mobilized from both domestic and external sources.

RESOURCE MOBILIZATION

Several funding sources were accessed to finance responses to the 2003–06 H5N1 outbreaks. The domestic funds came from (i) the contingency fund within the recurrent budget allocated to the MoH, the MARD, other ministries, and localities; and (ii) the supplementary budget. Besides, the government mobilized funding from external partners.

CONTINGENCY FUND WITHIN THE RECURRENT BUDGET

According to the Budget Law, within the recurrent budget allocated to ministries and localities, there is a contingency fund that could be utilized for prevention and response activities following the declaration of epidemics by designated authorities.

The government provides guidance on cost norms and cost items that can be covered by the contingency fund at central and local levels. With regard to the cost norm, Decision 574 dated 24 June 2005 and then Decision 309 dated 26 November 2005 provided the cost norm for supporting poultry farmers whose poultry were culled with VND 15,000/

poultry (equivalent to USD 1), and for the prevention and control of the epidemic with an average of VND 3,000/culled poultry during the epidemic period.

On 20 April 2004, Decision 396/2004/QD-TTg was issued by the Prime Minister on the allocation of VND 245.3 billion from the contingency fund of the year 2004 at the central level to support the provinces in their prevention and response to the influenza A(H5N1) pandemic, and the recovery of poultry. This Decision outlined the guidelines on the use of the contingency fund for epidemic response and prevention at the provincial level. The central level contingency fund was allocated to provinces to cover 50% of expenses to prevent and respond to the epidemics, as well as to carry out the culling of infected poultry. The local level contingency fund covered the remaining 50% of the expenses except for the two big cities of Hanoi and Ho Chi Minh City that accessed their local contingency fund to cover all expenses. During 2004–06, a large share of the central contingency fund was allocated to ministries, mainly to the MARD, for effectively responding to the influenza A(H5N1) pandemic and recovery of poultry production (Table A1).

Table A1 Central Contingency Fund Released to MARD, Billion VND

| Year | Amount |
|------|--------------------|
| 2004 | 22.8 ³⁰ |
| 2005 | 2 ³¹ |
| 2006 | 50 ³² |

³⁰ The Government, Decision 139/QD-TTg of Prime Minister dated 04 February 2004 on allocation of budget for MARD to prevent and control of AI, and Decision 906/QD-TTg of Prime Minister dated 16 August 2004 on allocation of budget for preventing and controlling AI and recovery of poultry production.

³¹ The Government, Decision 321/QD-TTg of Prime Minister dated 20 April 2005 allocation of budget for preventing and controlling AI.

³² The Government, Decision 01/QD-TTg of Prime Minister dated 3 January 2006 on allocation of budget for MARD to prevent and control AI.

SUPPLEMENTARY BUDGET

In response to the avian influenza emergency, the Prime Minister issued Decision No. 1239/QĐ-TTG dated 15 November 2005 regarding the provision of an additional budget for the prevention and control of influenza A(H5N1) pandemic, as permitted by the regulations of the State Budget.³³ The additional budget of VND 1,306.4 billion was allocated, as shown in Table 2.

The supplementary budget consisted of funds from the contingency fund from the Central Budget, revenues derived from a budget surplus, and loans from the credit balance. According to Decision 1239/QĐ-TTG of the Prime Minister, the Central Budget would release a reserve of VND 350 billion.

The Prime Minister appointed the Ministry of Finance (MoF) to propose to the Standing Committee of the National Assembly that an amount of VND 752.4 billion be set aside from the revenue surplus of the Central Budget following the State Budget Law. The Prime Minister also decided on the use of VND 204 billion from the National Health Support Project credit extended by the World Bank.

In 2015, a special budget management mechanism was approved whereby unused/unallocated funds from loans could be used for HPAI outbreak preparedness, response, and control activities in emergency circumstances, provided there was

Table A2 Supplementary Budget by Ministries, Billion VND

| Institution | Amount |
|---|--------------|
| Ministry of Health | 1,065 |
| Ministry of Defense | 2 |
| Ministry of Public Security | 6 |
| Ministry of Agriculture and Rural Development | 3 |
| Ministry of Transportation | 3 |
| Target supports for provinces | 200 |
| Other | 27 |
| Total supplementary budget | 1,306 |

Box 1

Article 9 of the State Budget Law dated 2004 stipulates that the central and local budgets shall be allocated 2%–5% of the total budget to cover natural disasters, fire prevention and control, important tasks of national defense and public security, and other urgent tasks arising beyond the budgetary estimates in the budgetary year.

Note: The 2015 State Budget Law adds expenditures on "diseases and epidemics" to the purpose of using the reserved budget.

Box 2

Article 59 of the State Budget Law dated 2004 states as follows:

The increase in revenues and savings compared with the assigned budget could be used to reduce overspending, to increase debt settlement, to supplement the financial reserve fund, and to increase budgetary reserves. The Government shall plan to make use of each expenditure and shall report to the Standing Committee of the National Assembly for adoption before implementation.

Note: The State Budget Law dated 2015 shifts the authority to decide upon the use of the increased revenue to the Standing Committee of the National Assembly.

³³ State Budget Law dated 2004 and Decree No. 60/2003/ND-CP dated 6 June 2003 whereby the government specifies and instructs the enforcement of the Law.

an agreement between the government and the donor(s) providing the funds. Thanks to the stable status of the epidemic, however, this source of funds was not needed. The provinces and municipalities were instructed by MoF to use local budgetary reserves and increase their budget revenues by aligning the additional funds from the central budget to effectively prevent and control the epidemic in the respective locality.

FINANCIAL AID FROM DONORS

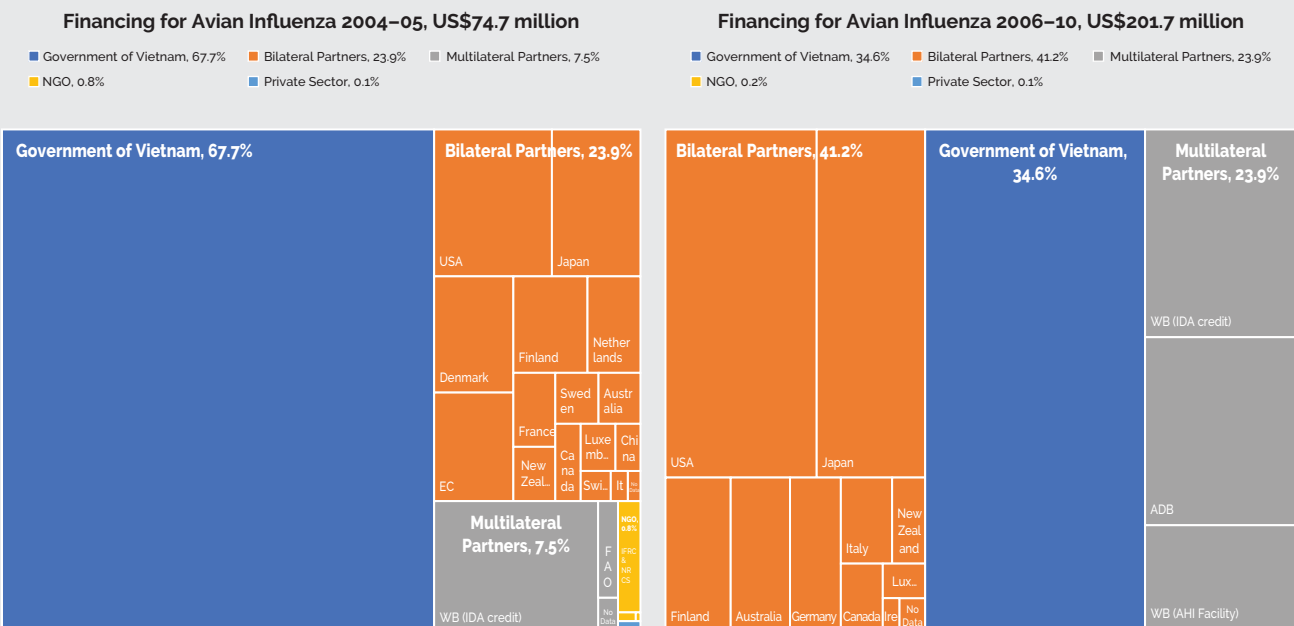
To mobilize and coordinate financial aid from various sources, the Government released a National Prevention Plan (Red Book) and the Joint National Program of Action (Green Book). The Green Book, prepared in early 2006 and adopted in May of the same year, became the key ODA coordinating mechanism for the response to avian influenza. The funding was mobilized from international sources such as the World Bank and the ADB. Other donors developed ODA projects in direct partnership with the government or through UN organizations. In May 2006, avian influenza was reported in 30 countries and territories, out of which ten countries detected human cases of infection resulting in 120 fatalities.

The rapidly changing virus raised serious concerns about the possibility of an imminent pandemic, and Vietnam expressed the need to take measures for the preparedness and response to the pandemic level. In this context, the donors expressed a willingness to provide financial support to the general fund rather than through the bilateral channel.

Most of the ODA projects supporting avian influenza control in Vietnam were initiated in late 2005 and early 2006. These projects focused on strengthening the response capacity of the agriculture and health sectors while the government's budget was used for culling poultry, controlling the epidemic, and implementing the poultry vaccination program that began in September 2005 and lasted until 2010.

A large proportion of the funds during the outbreaks were mainly mobilized through the government (68%); however, from mid-2006 onward financing for avian influenza preparedness and response shifted to international partners (65%). This shift in the funding landscape was reflected in the increased funding from donors and was the result of having the Green Book that contributed to the coordination of the international financial aid. Figure A3 compares the funding composition in 2004–05 and 2006–10.

Figure A3 Comparison of Financing Sources for Avian Influenza, 2004–05 and 2006–10





UTILIZATION OF MOBILIZED FUNDS

The financial resources depicted in Figure A3 were transferred to the ministries and localities according to the provisions of the State Budget Law, as follows:

- MoF transferred money from the central budget to the ministries by a funding limit, which meant that the ministries had to withdraw funds within the specified limit for transfers to goods and services suppliers.
- MoF transferred targeted subsidies from the Central Budget to provinces and municipalities. The provinces used the spending by payment advice, and the expenditures needed to be settled with MoF.
- Those provinces whose newly adjusted administrative border makes them eligible for additional funding from the Central Budget shall be granted 100% support for the prevention and control of the avian influenza epidemic.
- To those provinces with high rates of losses in birds and a level of spending exceeding 50% of the local budget fund, the Central Budget shall transfer funds to make up for the excessive spending.
- Those provinces whose level of spending for the prevention and control of the avian influenza epidemic is lower than VND 1 billion shall use their local funds budget and receive no additional support from the Central Budget.
- Hanoi and Ho Chi Minh City shall use their local funds budget.

UTILIZATION OF GOVERNMENT BUDGET FOR PREVENTING AND RESPONDING TO THE PANDEMIC

On 26 November 2005, the Prime Minister signed Decision 309/2005/QĐ-TTg on the provision of financial support for preventing and responding to the avian influenza pandemic, which entailed the following guidance on how the government budget was to be utilized:

- Direct support was provided to households, individuals, farms, and cooperatives that engaged in poultry breeding so that there were favorable loan conditions and compensation for each lost bird.
- Financial support was made available for preventing and responding to the avian influenza epidemic through costs of culling poultry and expenses incurred for lost birds; the purchase of equipment supplies for discovering and diagnosing the disease, and controlling the epidemic; availability of chemicals for disinfecting, sterilizing, and cleaning breeding facilities; the purchase of uniforms; and the provision of allowances to staff on duty.

Guiding principles for using the budget for the prevention and control of the avian influenza epidemic included:

- The central budget accounts for 50% of the total budget allocated to the prevention and control of the avian influenza epidemic.

Furthermore, the Prime Minister also directed the ministries and the Provincial People's Committees to reconfigure the system of warehouses, make national reserves of medicines and equipment available, and plan the mobilization of local human resources in response to epidemics and pandemics according to already existing scenarios.

The ministries and the Provincial People's Committees used the contingency fund from the government budget and additional budget to implement epidemic-related investment projects and procure materials and goods for the prevention and control of the epidemic.

During the 2003–06 outbreaks, the contingency fund was accessed to:

- Provide improved infrastructure and equipment for the whole system, including preventive and curative care;
- Provide sufficient medicines for the distribution to treatment units;
- Ensure strengthened surveillance to promptly detect an influenza A(H5N1) outbreak in poultry, and localize and control the spread pattern of the epidemic;
- Support poultry farmers whose poultry was culled and instruct banking organizations to provide favorable interest rates and debt restructuring;
- Procure medical equipment (ventilators, monitors, scanners, testers) and vaccine supplies as included in the Plan;

- Conduct environmental sanitation enhanced thorough sterilization in shelters, especially on small farms and areas with past outbreaks; and
- Promote the information, education, and communication (IEC) campaign for the prevention and control of the epidemic.

Whereas the Central Budget was allocated to infrastructure, national reserves of antivirals, and emergency and treatment equipment for central hospitals, the local budget was used for the procurement of emergency and treatment equipment to meet local needs.

The budget allocated to the MoH was utilized for major expenditures³⁴ as follows:

- Investments in four Level 3 biosafety laboratories located in Hanoi, Ho Chi Minh City, Nha Trang, and Hue;
- Procurement of 9.7 million tablets of imported Tamiflu, valued at VND 280 billion, equivalent to US\$17.4 million;
- Procurement of 20 million tablets of Oseltamivir (including 10 million tablets of finished product and raw chemical materials for the production of 10 million tablets as a backup supply) at a value of VND 565 billion, equivalent to US\$35.2 million; and
- Procurement of equipment for including 1,000 ventilators with the total value of VND 270 billion or US\$16.8 billion.

With respect to the budget allocated to the MARD, the Department of Animal Health, and the National Institute of Animal Husbandry used funds for the following purposes:

- Conducting laboratory testing and strengthening the diagnosis capacity;
- Providing equipment and disinfectants for disinfection activities;
- Providing per diem pay for standby staff at checkpoints during standstill periods;
- Supporting farmers who engaged in culling of infected poultry; in the first outbreak, the

amount of financial support was VND 7,000 (US\$0.44) per bird which was increased to VND 15,000 (US\$0.95) during the second outbreak in 2005;

- Encouraging new poultry production;
- Promoting animal feeds for state-owned breeding stocks; and
- Conducting IEC activities to increase public awareness of preparedness and response to the H5N1 pandemic.

The funds were directly allocated to the MARD and were then distributed by the MARD to departments that were responsible for implementing national surveillance and disease prevention. They also provided support to state-owned poultry farms, including compensation for the loss of poultry as a result of culling, and they also covered disposal costs, disinfection, and feed for state-owned breeding farms. The funds for the control of avian influenza were disbursed from provincial budgets, while the funds originating from the Central Budget were only disbursed to provinces that faced difficulties in accessing funds from their provincial budget.

According to Directive 25/2005/CT-TTg dated 12 July 2005 and issued by the Prime Minister, the use of vaccinations for poultry had been considered the fundamental solution to prevent avian influenza A(H5N1). Subsequently, the government budget was used in vaccine procurement and vaccine production. The National Project entitled "Control and eradication of HPAI by vaccination" was approved by the MARD for phase I with a total budget of VND 246 billion and for phase II with a total budget of VND 185 billion, which was entirely funded by the Central Budget. The major components of the project costs included poultry vaccine procurement for 62 provinces, and serological and viral monitoring of avian influenza, along with training, communication, and management. By the time the national project ended, and the national vaccination program officially came to a halt, vaccinations continued, as sporadic outbreaks were still reported.

³⁴ Which, if procured, fully complied with the Tenders and Procurement Law on public goods.

UTILIZATION OF FINANCIAL AID FROM DONORS

Mechanisms for management, receipt, and use of ODA

Foreign grants constitute nonrefundable assistance in cash and in-kind by donors to support development or humanitarian purposes, as well as support science- and technology-related activities.

- Management, receipt, and use of grants had to comply with the government's then regulatory framework, which included Decree No. 131/2006/NĐ-CP dated 09/11/2006 of the government regarding management and use of ODA (which was replaced by Decree No. 16/2016/NĐ-CP dated 16/3/2016) and Decree No. 93/2009/NĐ-CP dated 22/10/2009 on management and use of foreign non-governmental aid. At the ministerial level, MoF and the MPI issued circulars to provide guidelines on the implementation of Decree No 93.

Grants supporting the control of the epidemic can be divided into two types: pre-outbreak and post-outbreak. For the pre-outbreak case, it is mainly project-based grants. The management and use of these types of grants follow a multi-step procedure dictated by the regulations on ODA management and take time to complete. In addition to commitments to donors, the process of implementing the multi-step procedure above must also comply with the current state budget management procedure and public investment management. For post-outbreak grants, they are considered as *emergency relief* when: (i) they are provided immediately following the emergence of the outbreak; and (ii) they last for three months at most once the outbreak ceases. After this period, if such grants continue, they will be considered as grants for dealing with epidemic-induced consequences and must follow the normal procedures for overseas nongovernmental aid. The following authorities approve emergency relief grants:

- The head of state authorities and the chairman of the Provincial/Municipal People's Committee approve the grants which are attached to the specific recipient as requested by the donor.
- The chairman of the Vietnam Fatherland Front approves the grants without specific recipients.

The grant recipient was expected to conduct necessary activities related to customs procedures and grant confirmation. Import tax, including import tax and value-added tax applicable to imported goods for all the grants and humanitarian aid in kind, were waived.

The recipient of in-kind foreign aid had to formulate its report upon receipt and use the assistance following the instructions of the MoF stated under the Circular No. 225/2010/TT-BTC dated 31/12/2010 regarding the regulations of a state financial management mechanism for foreign grants channeled through the state budget.

UTILIZATION OF ODA FOR THE PREVENTION AND CONTROL OF THE EPIDEMIC

As part of the Joint Action Program on Avian and Human Influenza Prevention and Control, 2006–10, the Government of Vietnam and the donor community already confirmed US\$250 million, out of which the ODA provided approximately 50%. The ODA included direct bilateral aid, Joint Government–UN Program, the Trust Fund under the management of the World Bank, multi-lateral assistance (including loans, credits, and subsidies from the Asian Development Bank and the World Bank), and support from regional organizations such as the Asia-Pacific Economic Cooperation Forum, and Association of Southeast Asian Nations.

The total spending was estimated at around US\$250 million from 2006–2010, with the amount being allocated to three principal components (Table A3):

- Component 1—US\$31.2 million for the coordination of strengthening activities;
- Component 2—US\$116.4 million for the control and elimination of highly pathogenic avian influenza in the agriculture sector; and
- Component 3—US\$102.4 million for the control of avian influenza, as well as preparedness and response to a pandemic in the health sector to be implemented by the .

Besides, the amount of US\$13.5 million was reserved for inflation, and US\$27 million was reserved for infrastructure, of which 75% of the latter was reserved for poultry vaccination and compensation (equivalent

Table A3 Budget Estimate by Key Components in US\$, 2006–10

| | External | Local | Total |
|---|------------------|------------------|------------------|
| <i>I. Strengthening coordination</i> | 18,972.6 | 10,639.4 | 29,612.0 |
| • National preparedness for response | 318.0 | 272.0 | 590.0 |
| • Policy and strategy development | 6.0 | 128.0 | 134.0 |
| • Program coordination | 2,532.6 | 2,873.4 | 5,406.0 |
| • Improvement of community awareness, information, education, and communication | 4.0 | 4,196.0 | 4,200.0 |
| • Program monitoring and evaluation | 600.0 | 1,200.0 | 1,800.0 |
| • Supporting regional activities and international agencies | 15,512.0 | 1,970.0 | 17,482.0 |
| <i>II. Control and elimination of highly pathogenic avian influenza in the agriculture sector</i> | 30,175.8 | 53,561.3 | 83,737.1 |
| • Capacity strengthening for the animal health sector (capacity building) | 7,382.5 | 8,380.5 | 15,763.0 |
| • Disease and epidemic control | 20,885.4 | 34,274.8 | 55,160.3 |
| • Epidemiological surveillance and investigation | 1,124.8 | 3,319.0 | 4,443.8 |
| • Restructuring the poultry farming sector (1) | 783.0 | 7,587.0 | 8,370.0 |
| <i>III. Prevention and control and preparedness for response to the influenza pandemic in the health sector</i> | 55,174.5 | 41,055.50 | 96,230.00 |
| • Strengthening monitoring and response | 15,158 | 22,767.0 | 37,925.0 |
| • Strengthening diagnostic capacity | 11,286 | 3,156.0 | 14,442.0 |
| • Strengthening the treatment system | 22,330.5 | 11,922.5 | 34,253.0 |
| • Improvement of research | 6,400 | 3,210 | 9,610.0 |
| <i>Basic spending</i> | 104,322.9 | 105,256.2 | 209,579.1 |
| <i>Reserved funding for infrastructure</i> | 15,399.1 | 11,590.2 | 26,989.4 |
| <i>Reserved funding related to inflation</i> | 2,648.4 | 10,828.3 | 13,476.7 |
| Total spending on plan (including reserved funding) | 122,370.4 | 127,674.7 | 250,045.2 |

to US\$13.5 million and US\$9.4 million respectively).

Within the Plan, the level of expenditure on operations (around 15% of the total budget estimate) and reserved funding (about 16%) was quite high. Other budget lines included the procurement of goods (around 33%), consultancy and training services (about 23%), basic construction (about 3%), communication to improve community's awareness, IEC (about 2%), program management, and monitoring and evaluation (about 2%).

In addition to the planned share of the government budget and ODA, as mentioned above, around US\$225 million was also expected to be mobilized from the private sector for restructuring of the poultry farming sector according to the

"Commercialization Strategy" proposed by the MARD. Furthermore, about US\$222 million was proposed by the MoH for other activities related to the preparedness and response to avian influenza within the health sector.

No other regulations are available on the management of the humanitarian financial support of in-house organizations and individuals except for the regulations under the State Budgetary Law on capturing the incorporation of the voluntary financial support into the state budget. In case of an outbreak, relief funds are directly provided by the organizations or individuals, or through the system of the Fatherland Front.



Lessons Learned

- Political commitments through leadership, steering of the government at all levels, and the involvement of the entire political system in the prevention and control of avian influenza played key positive roles.
- Ensuring stable and sustainable financial resources for the ongoing activities of the preventive authorities, as well as detecting and monitoring the epidemic, constituted an essential element to ensure medical security. Most of the health units that performed health security activities were active within the preventive care system. These units receive recurrent budget for human resources, routine operations and irregular budget for specialized tasks of disease prevention and control, and control of risk factors for public health. This system works well to reduce the risk of disease outbreaks, and if any diseases occur, the whole system shall be mobilized for effective prevention and control.
- Funds from additional reserve budgets for outbreaks ensured financial preparedness for disease prevention and control. The Budget Law stipulating the formation of a reserve fund at all levels indicates the advantages of decentralization that allow the most rapid responses to local needs, especially when it comes to timely epidemic response and control.
- The government acted in a timely and decisive manner by directing the human and animal health sectors to closely cooperate on the allocation of funds for priorities, such as epidemiological surveillance, and procurement of medicines, equipment, and chemicals.
- In addition to accessing the budget, Vietnam has been flexible in expanding international cooperation and mobilizing and receiving support, not only for emergencies to respond to avian influenza but also for developing long-term capacity-building strategies in the areas of response monitoring.
- International assistance from bilateral, multi-lateral, and NGOs have been effectively coordinated through the PAHI. This organization has been successful at coordinating and facilitating the mobilization of financial and technical support from the international community and synthesizing and sharing information between the human and animal health sectors, and between government authorities and international development partners.
- The funds for the prevention and control of the epidemic were allocated on a timely basis for the epidemic response activities. There was a mechanism for the procurement of antivirals in place, in the form of contractor designation, to shorten the procurement procedures and time required to meet the demands for epidemic control.
- In addition to allocating resources to respond to and control avian influenza, the funds were also used for implementing capacity building initiatives in the health and veterinary sectors, thereby improving laboratory capacity and epidemiology surveillance, and using communication to raise awareness and induce behavioural changes. These activities are sustainable in the long run.





annex 2

HEALTH SECURITY FINANCING ASSESSMENT TOOL

Vietnam health security financing assessment is the first application of the HSFAT. The assessment also pilot tested the tool and helped generate practical feedbacks that are valuable for further refinement and development of a standardized tool. A critical part of the application in Vietnam was customization of the generic tool to reflect situations on the ground, which involved several consultations with a multidisciplinary team (comprised of experts in public health, zoonotic, health financing, public expenditure) spearheaded by the Vietnam health security technical taskforce (hereinafter referred to as Vietnam taskforce). Also, even though, the tool as designed, advocates for involvement of multitude of ministries for a comprehensive assessment including ministries of finance, health, agriculture, livestock, wildlife, environment, water sanitation and hygiene for all stages; and transportation, defense, energy, information, and education, among others for response and recovery; in practice it was a stretch to obtain a meaningful engagement from all considering

the time and resources available to complete the task. Thus, the Vietnam taskforce determined to focus on the selected key players, including that involved ministries of health, agriculture/livestock, and finance. Other countries will encounter a similar challenge and which sectors to focus on is an important decision to make at the start of the assessment taking into consideration local contexts.

Below is the tool as applied in Vietnam with all the adjustments and customizations made during the assessment. The various sections to be assessed are organized around five themes: (i) health security organization and institutional arrangements, (ii) country macro-fiscal context, (iii) health security budgeting processes and resource allocation, (iv) financing of health security components, and (v) efficiency and sustainability of health security financing. The financing of health security, section (iv), is aligned to the 19 JEE technical areas, and an attempt is made to track expenditures for key activities under each technical area.

| Health Security Financing Assessment Questions | | Sources |
|--|---|---|
| 1 | <p>Health security organization and institutional arrangements</p> <p><i>The questions below are designed to examine how health security activities are organized and structured at the national level within government and with non-state actors (civil society and private sector), across sectors and in the context of routine and emergency financing. Stakeholders mapping identifies key players in health security in the country. It also examines governance and coordination at national and regional levels, as well as the donors within each country's One Health framework. It seeks to understand the role of each institution involved in health security activity and their coordination mechanism.</i></p> | |
| 1.1 | How is health security organized? | |
| 1.1.1 | <input type="checkbox"/> What is your understanding of health security in this country? What is the scope of health security, and how is it defined? <input type="checkbox"/> How is health security organized/structured—in animal, human health, and other sectors—at the national and subnational levels? Who are involved? With what function and role? <input type="checkbox"/> How do community-based organizations, civil society, and private sector organizations fit in the health security structure? <input type="checkbox"/> Is there a national health security coordinating mechanism in your country? <input type="checkbox"/> How is the country organized/structured in terms of prevention, detection, response, and recovery? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. |
| 1.1.2 | <input type="checkbox"/> Who is responsible for planning, allocation, and monitoring of finance and other resources for health security at national and subnational levels? | |



| Health Security Financing Assessment Questions | | Sources | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|------------------------|----------|----------|----------|----------|-----|---|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|------------------|--|--|--|--|--|-------------|--|--|--|--|--|---------------------------|--|--|--|--|--|------|--|--|--|--|
| 1.1.3 | <input type="checkbox"/> Is there a multisectoral preparedness plan to improve health security? <input type="checkbox"/> Are there other action plans for specific diseases (such as avian flu, dengue, etc.) and other areas (such as disaster, etc.)? <input type="checkbox"/> How often are they updated? What is the process for updating plans? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | What happens in a public health emergency? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2.1 | <input type="checkbox"/> How is the country organized to respond in case of a public health emergency? <input type="checkbox"/> Is there a national public health emergency action plan? <input type="checkbox"/> What is included in the public health emergency action plans, e.g., does it cover all JEE technical areas? <input type="checkbox"/> Has it been costed? <input type="checkbox"/> Does the government have a business continuity plan? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2.2 | <input type="checkbox"/> What is the mechanism, if any, to declare a public health emergency and release emergency funding? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 | Stakeholder mapping | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3.1 | <input type="checkbox"/> Who are the key stakeholders (at different levels of government, private sector, regional and international organizations, and development partners) financing health security? (consider mapping JEE technical areas to the stakeholders responsible) <input type="checkbox"/> Who are the principal recipients (different levels of government, private sector, civil society, etc.) of funding for health security? <input type="checkbox"/> For each stakeholder, what are the specific health security functions and services currently provided per JEE technical area? <input type="checkbox"/> Does your organization have specific health security functions and tasks related to 19 JEE health security technical areas? What is your role in health security areas? <input type="checkbox"/> Does your organization receive funding for health security? If yes, for which activity/task? <input type="checkbox"/> For those JEE technical areas where responsibility is split between multiple entities, please explain. <input type="checkbox"/> Consider using a matrix similar to the following: | <input type="checkbox"/> Consultative meeting with multidisciplinary teams | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>19 JEE technical areas</th> <th>Entity 1</th> <th>Entity 2</th> <th>Entity 3</th> <th>Entity 4</th> <th>...</th> </tr> </thead> <tbody> <tr> <td>National Legislation, Policy, and Financing</td> <td style="background-color: #0056b3;"></td> <td style="background-color: #0056b3;"></td> <td style="background-color: #0056b3;"></td> <td style="background-color: #0056b3;"></td> <td></td> </tr> <tr> <td>IHR Coordination, Communication and Advocacy</td> <td></td> <td style="background-color: #0056b3;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AMR</td> <td></td> <td></td> <td style="background-color: #0056b3;"></td> <td></td> <td></td> </tr> <tr> <td>Zoonotic Disease</td> <td></td> <td></td> <td></td> <td style="background-color: #0056b3;"></td> <td></td> </tr> <tr> <td>Food Safety</td> <td></td> <td></td> <td></td> <td style="background-color: #0056b3;"></td> <td></td> </tr> <tr> <td>Biosafety and Biosecurity</td> <td></td> <td style="background-color: #0056b3;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td>....</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | | | 19 JEE technical areas | Entity 1 | Entity 2 | Entity 3 | Entity 4 | ... | National Legislation, Policy, and Financing | | | | | | IHR Coordination, Communication and Advocacy | | | | | | AMR | | | | | | Zoonotic Disease | | | | | | Food Safety | | | | | | Biosafety and Biosecurity | | | | | | | | | | |
| 19 JEE technical areas | Entity 1 | Entity 2 | Entity 3 | Entity 4 | ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| National Legislation, Policy, and Financing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IHR Coordination, Communication and Advocacy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AMR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Zoonotic Disease | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Food Safety | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Biosafety and Biosecurity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Health Security Financing Assessment Questions | | Sources | | | | | | | | |
|--|--|---|---|---|---|--|---|--|--|--|
| 1.3.2 | <input type="checkbox"/> What is the role of private health service providers and animal health service providers in the prevention, detection, response, and recovery? (This includes reporting of cases, ensuring continuity of service provision during emergency, training of health workers, etc.) | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. | | | | | | | | |
| 1.3.3 | <input type="checkbox"/> What are the investments by the private sector in health security? (This includes health security related spending by private corporations, industry to protect their investments/operations). (included in 3.2.1) | | | | | | | | | |
| 1.3.4 | <input type="checkbox"/> Are there any JEE technical areas in health security for which no entity is responsible? | | | | | | | | | |
| 1.3.5 | <input type="checkbox"/> Are there any JEE technical areas that are not implemented by any entity? If yes, name them. | | | | | | | | | |
| 1.3.6 | <input type="checkbox"/> What is the stakeholder influence and level of interest, commitment, and engagement in the overall governance of health security? Consider using this Metrix to place stakeholders in the appropriate box). <table border="1" data-bbox="349 955 1120 1186"> <tr> <td rowspan="2">Level of influence and power</td> <td>High influence; Low interest, commitment, and engagement</td> <td>High Influence; High interest, commitment, and engagement</td> </tr> <tr> <td>Low influence; Low interest, commitment, and engagement</td> <td>Low influence; High interest, commitment, and engagement</td> </tr> <tr> <td colspan="3">Level of interest, commitment, and engagement</td> </tr> </table> | Level of influence and power | High influence; Low interest, commitment, and engagement | High Influence; High interest, commitment, and engagement | Low influence; Low interest, commitment, and engagement | Low influence; High interest, commitment, and engagement | Level of interest, commitment, and engagement | | | <input type="checkbox"/> Consultative meeting with multidisciplinary teams |
| Level of influence and power | High influence; Low interest, commitment, and engagement | | High Influence; High interest, commitment, and engagement | | | | | | | |
| | Low influence; Low interest, commitment, and engagement | Low influence; High interest, commitment, and engagement | | | | | | | | |
| Level of interest, commitment, and engagement | | | | | | | | | | |
| 1.4 | Health security governance and coordination | | | | | | | | | |
| 1.4.1 | <input type="checkbox"/> Is there a national health security coordinating mechanism? If yes, what is it? <input type="checkbox"/> Is there a financing planning process that brings all plans and components of health security together? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. | | | | | | | | |
| 1.4.2 | <input type="checkbox"/> What are the coordinating mechanisms supporting the implementation of the One Health Framework? <input type="checkbox"/> How are they financed? | | | | | | | | | |
| 1.4.3 | <input type="checkbox"/> What are the coordinating mechanisms to address cross-border and or regional issues on health security? <input type="checkbox"/> Which entities involved in regional collaboration to address trans-border issues/stakeholders in health security receive finances from your government? <input type="checkbox"/> What is the linkage between regional and national level coordination structures | | | | | | | | | |



| Health Security Financing Assessment Questions | | Sources |
|--|---|---|
| 1.5 | Donor coordination | |
| 1.5.1 | <input type="checkbox"/> Who are the key development partners providing financial support to health security? <input type="checkbox"/> How much do they contribute annually? <input type="checkbox"/> What mechanisms do you have in place to coordinate donor support for health security? <input type="checkbox"/> How is donor support integrated into government budgeting, planning, and allocation processes? <input type="checkbox"/> To what extent is the donor support to the country aligned to priorities set out in the national health security framework? What mechanisms are in place to ensure the implementation of donor-supported programs through national systems? <input type="checkbox"/> What are the strengths and weaknesses in coordinating donor support to health security? <input type="checkbox"/> How can these weaknesses be addressed? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. |
| 2 | Country macro-fiscal context <i>The macro-fiscal context has implications for the overall size of the budget and the public funds that could be made available to finance health security. The following questions are designed to present the broader country context relevant to health security financing.</i> | |
| 2.1 | Overall public revenue and expenditure | |
| 2.1.1 | <input type="checkbox"/> What is the overall level of government spending? <input type="checkbox"/> Government spending on economic and functional classification? | <input type="checkbox"/> Desk review of country economic briefs from MoF, national health accounts, world economic outlook data from IMF |
| 2.1.2 | <input type="checkbox"/> How is spending distributed geographically and across levels of government? | |
| 2.1.3 | <input type="checkbox"/> How does the government raise revenue? <input type="checkbox"/> Sources of government revenue, including natural resources and grants? | |
| 2.1.4 | <input type="checkbox"/> How much of national government revenue is raised by the national government vs. sub-national levels? <input type="checkbox"/> How are revenues shared geographically or across levels of government, including subnational levels? | |
| 2.1.5 | <input type="checkbox"/> Is government spending in line with its revenue and longer-term capacity to spend? | |

| Health Security Financing Assessment Questions | | Sources |
|---|---|---|
| Consider a table similar to this to consolidate snapshot data on macroeconomic and health financing | | |
| Indicators | | Year |
| Macroeconomic | | |
| Government expenditure as a share of GDP | | |
| Government revenue as a share GDP | | |
| Government budget deficit as a share of GDP | | |
| Expenditure on development investment | | |
| Gross public debt as a share of GDP | | |
| ODA as a share of government revenue | | |
| Debt servicing (payment of principal and interest) as a share of government expenditure | | |
| Health financing | | |
| Total health expenditure per capita | | |
| Total health expenditure as % of GDP | | |
| % of public health expenditures in total health expenditure (THE) | | |
| Government health budget as a share of total government expenditure | | |
| % of out-of-pocket (OOP) payment in THE | | |
| % of external aids in THE | | |
| 3 | Health security budgeting processes and resource allocation | |
| | <i>This section examines both domestic and external health security financing and maps various sources of revenues for health security. It specifically assesses: i) overall expenditure on health security; ii) the sources of expenditure; iii) the budgeting process and how resources are transferred across sectors; iv) mechanisms of mobilizing contingency and absorptive capacity for surge financing in case of an emergency; v) external financing and how well it is integrated and coordinated through country systems; vi) financing for cross border issues; and (vii) the extent to which the country has mechanisms to integrate humanitarian funding.</i> | |
| 3.1 | Revenue mobilization | |
| 3.1.1 | <input type="checkbox"/> How do you identify programs and corresponding budgets for health security? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national levels. |
| 3.1.2 | <input type="checkbox"/> What are the sources of health security financing (list each including, government, external assistance, private, etc.) | |
| 3.1.3 | <input type="checkbox"/> What are the policies that determine the overall level/share of government spending on health security? (e.g., are there policies/laws dictating minimum allocation for health security?) | |
| 3.2 | Private sector | |
| 3.2.1 | <input type="checkbox"/> Are there any contributions from private agencies? (This includes local and international non-governmental organizations (NGO), national and international for-profit organizations/companies, etc.) | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 3.2.2 | <input type="checkbox"/> What are the investments by the private sector in health security? (This includes health security related spending by private corporations, industry to protect their investments/operations). | |
| 3.2.3 | <input type="checkbox"/> What is government procedures and process required to approve and regulate private contribution/investment in health security from private sector partners? Which agency involved in this process? Is there any constraint/limitation of this process? How to address this constraint? | |



| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 3.3 | Planning and budgeting | |
| 3.3.1 | <input type="checkbox"/> Is there an allocated budget for health security components (JEE technical areas)? | <input type="checkbox"/> Desk review of relevant policies and reports |
| 3.3.2 | <input type="checkbox"/> Are there any parameters defined for health security-related budget development? For example, does the government use a medium-term expenditure framework or public spending plan? | <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 3.3.3 | <input type="checkbox"/> What type of budgeting process is used in the country, e.g., input-based or output-based, and how does this affect? <ul style="list-style-type: none"> <input type="checkbox"/> Allocation between line ministries? <input type="checkbox"/> Ability to reallocate resources in response to unforeseen emergencies, including compensation for livestock? | |
| 3.3.4 | <input type="checkbox"/> Are expenditures closely linked with technical programs as described in the preparedness plan? | |
| 3.3.5 | <input type="checkbox"/> What proportion of external financing for health security is off-budget? | |
| 3.3.6 | <input type="checkbox"/> To what extent do donors use the government systems, and if they do not, what is the reason? | |
| 3.3.7 | <input type="checkbox"/> What are the financial annual commitments and disbursements made to regional entities involved in health security? | |
| 3.3.8 | <input type="checkbox"/> What are the constraints and limitations of the current planning, budgeting process? How to address these constraints | |
| 3.4 | Organization, fund flow, and absorption | |
| 3.4.1 | <input type="checkbox"/> Is there an established mechanism for raising funding for emergencies? <input type="checkbox"/> What are the sources (domestic contingency funding, regional reserve for emergency? Reallocation of budgetary resources? etc.)? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 3.4.2 | <input type="checkbox"/> What are the mechanisms and structures to receive humanitarian and other international assistance? <input type="checkbox"/> What are the coordinating structures? | |
| 3.4.3 | <input type="checkbox"/> What are the mechanisms to receive surge funding for emergencies? <input type="checkbox"/> Which ministry/agency is responsible for receiving funds? What policies/regulations govern this? | |
| 3.4.4 | <input type="checkbox"/> What processes are in place to ensure quick absorption of funds? Consider: spare capacities (labor, supplies, equipment, etc.), including stockpiling; and procurement contingencies (i.e., pre-negotiated contracts with suppliers) | |
| 3.4.5 | <input type="checkbox"/> What are the arrangements for mobilizing resources, including diverting existing budgetary resources across ministries or sectors? What rules govern such mobilization? | |
| 3.4.6 | <input type="checkbox"/> How does this compare to what can be quickly mobilized? (compare what is possible given the country context with what is in place) | |
| 3.4.7 | <input type="checkbox"/> How is the coordination mechanism financed (in both non-emergency and emergency situations)? <input type="checkbox"/> Which policies define and govern relationships between agencies and fund flows? | |

| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 3.4.8 | <input type="checkbox"/> What are the mechanisms of fund flow from the receiving agency/ ministry to implementing agency/ ministry? <input type="checkbox"/> Does this differ in emergency and non-emergency times? | |
| 3.4.9 | <input type="checkbox"/> Are there specific financial management (FM) rules that govern operations during emergencies? How are they different from FM rules governing regular/non-emergency periods? | |
| 3.4.10 | <input type="checkbox"/> What is the mechanism for establishing contingency funding? <input type="checkbox"/> What are the triggers? | |
| 4 | <p>Financing of health security components</p> <p><i>This section assesses funding for the JEE technical capacities and provides a baseline for what countries are spending on the various technical capacities. The JEE and PVS assessments will provide needs for future financing in a prioritized national preparedness and response plan.</i></p> <p>Data for this section should be collected using structured questionnaires for each health security activity under the 19 JEE technical areas. The structured questionnaires will vary from country to country as countries have different budget structures, levels of fiscal decentralizations, and institutional arrangements and reporting across budget units. Suggested points to consider while developing structured questionnaires include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Obtain actual or audited government financial statements <input type="checkbox"/> Select a fiscal year(s) for the assessment for which complete actual government financial statements can be obtained <input type="checkbox"/> To minimize double-counting include expenditures reported by final receiving budget units <input type="checkbox"/> To allow flexibility, prepare separate questionnaires for each entity identified in the mapping exercise <input type="checkbox"/> Identify key health security activities under each of the 19 JEE technical areas with sufficient break down into specific activity to allow matching with a line-item in the budget statement. <input type="checkbox"/> Involve finance officers from respective ministries for a better understanding of the budget structures and facilitate the crosswalk between health security activities and the relevant line-item in the budget. <input type="checkbox"/> For shared or bundled expenditures, assign weight or proportion to attribute part of the spending in consultation with experts from finance, health, and agriculture at national and sub-national levels. <p>In what follows, you will find health security activities consolidated under the 19 JEE technical areas for Vietnam. The actual structured questionnaires for Vietnam include a source of funding and other background information.</p> | |
| Prevention | | |
| 4.1 | National legislation, policy, coordination, communication | |
| 4.1.1 | <input type="checkbox"/> What are the expenditures related to developing and updating relevant legislation, and coordination with other relevant ministries on events that may constitute a public health threat or risk of national or international concern? <input type="checkbox"/> What are the expenditures on advocacy? What are the expenditures for dissemination and communication on a legal document concerning health security? | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |



| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 4.1.2 | <input type="checkbox"/> What are the expenditures related to the establishment of functional mechanisms for intersectoral collaborations that include animal and human health surveillance units and laboratories? (This provides capital as well as operating expenses for information technology (IT) and other investments for information exchange, expenses to test and update the communication mechanisms regularly, etc.). <ul style="list-style-type: none"> ○ Expenditure on meetings, sum-up conference of the inter-sectoral steering committee (Health, Agriculture, Trade, and Finance, etc.) ○ Expenditure on inter-sectoral inspection ○ Expenditure on information exchange and report system among stakeholders/agencies | |
| 4.2 | IHR coordination, communication, and advocacy | |
| | Questions IHR coordination, communication, and advocacy are integrated into national legislation, policy, and financing. See 4.1 above. | |
| 4.3 | AMR | |
| 4.3.1 | <input type="checkbox"/> What are the expenditures for operating AMR laboratory-based surveillance? (These includes expense to conduct AMR detection and reporting, data validation verifying lab methods and monitoring of quality through external quality assurance) <ul style="list-style-type: none"> ○ Developing and finalizing the standard laboratory procedures and guidelines on clinical microbiology ○ Setting up the National Center for Clinical Microbiology ○ Continuous training for lab-technicians in clinical microbiology at the National Center for Quality Assurance and 30 laboratories nationwide. ○ Expenditure on organizing scientific conferences on AMR topics ○ Developing forms and software for monitoring and reporting the use of antibiotics use and drug-resistance situation ○ Expenditure on establishing a drug resistance surveillance system ○ Developing databases of antibiotic use and drug resistance ○ Developing a set of evaluation indications, setting up a system for collecting and processing data. Developing a website for monitoring and evaluation of drug resistance. ○ Developing regulations and guidelines on the use of antibiotics in cultivation and animal husbandry, poultry and fishery ○ Developing a list of antibiotics allowed to be used and the residual limit of antibiotics in cultivation and animal husbandry, poultry and fishery ○ Establishing a surveillance system for using antibiotics in cultivation, and animal husbandry, poultry, and fishery | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |

| Health Security Financing Assessment Questions | | Sources |
|--|---|---|
| 4.3.2 | <input type="checkbox"/> What are the expenditures related to surveillance of infections caused by AMR pathogens in humans and animals? (This includes capital as well as operating expenses for establishing and operating sentinel sites for surveillance of infections caused by AMR pathogens among humans as well as among livestock) <ul style="list-style-type: none"> ○ Continuous training for health workers in strengthening capacity for infection control. ○ Expenditure on investment to establish sentinel sites for surveillance of infection caused by AMR pathogens in humans (key hospitals) and animals. ○ Expenditure on operating sentinel sites for surveillance of infection caused by AMR pathogens in humans (key hospitals) and animals. ○ Developing a set of indicators of infection control surveillance ○ Organizing national and international scientific conferences on infection control | |
| 4.3.3 | <input type="checkbox"/> What are the expenditures for healthcare associated infections (HCAI) prevention and control programs? (These include activities such as establishing and maintaining the isolation unit, operating a system to evaluate effectiveness of the infection control measures regularly) <ul style="list-style-type: none"> ○ Revising, updating, and promulgating legal documents, policies, national technical standards, and guidelines on hospital infection control. ○ Setting up on-site surveillance and reporting system for hospital infection. ○ Training, scientific research and international collaboration in the fields of infection control | |
| 4.4 | Zoonotic diseases | |
| 4.4.1 | <input type="checkbox"/> What are the expenditures related to developing, updating, and implementing Zoonotic Diseases policy and One Health Framework? (This includes expenses related to consultants, conference/consultation, etc.) <ul style="list-style-type: none"> ○ Expenditure on developing mechanisms and policies. | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.4.2 | <input type="checkbox"/> What are the expenditures related to staffing of the veterinary services and animal health, surveillance, and response staff? <input type="checkbox"/> Expenditure on human resources of the veterinary services and animal health, surveillance and response staff | |
| 4.4.3 | <input type="checkbox"/> What are the expenditures for developing and implementing a surveillance system of zoonotic pathogens of greatest concern? (This includes expenses for surveillance of zoonotic disease, reporting and notification systems, etc.) <ul style="list-style-type: none"> ○ Prevention of animal diseases ○ Prevention and eradication of rabies ○ Prevention of Avian influenza ○ Purchase of bird flu vaccines ○ Strengthening diagnostic capacity | |



| Health Security Financing Assessment Questions | | Sources |
|--|---|---|
| 4.4.4 | <input type="checkbox"/> What are the expenditures related to the coordination/linking of public health laboratories, wildlife, and animal health laboratories? <input type="checkbox"/> Supporting coordination/linking of public health laboratories, wildlife and animal health laboratories | |
| 4.5 | Food safety | |
| 4.5.1 | <input type="checkbox"/> What are the expenditures related to the development, maintenance, and update of a national food safety standard? <ul style="list-style-type: none"> ○ Expenditure on developing and updating of national food safety standards | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.5.2 | <input type="checkbox"/> What are the expenditures related to staffing of food safety, human health, surveillance and response staff, and food safety control? <input type="checkbox"/> Workforce (salaries, allowances, bonuses, contributions) <input type="checkbox"/> Training in capacity building | |
| 4.5.3 | <input type="checkbox"/> What are the expenditures on the food safety surveillance system (other than staffing)? (This includes laboratories in human health and animal health, agriculture, etc.) <ul style="list-style-type: none"> ○ Operating costs of food safety surveillance system ○ Expenditure on appraisal and accreditation of food safety qualification for facilities, products, and advertisement ○ Expenditure on specialized inspection, inter-sectoral inspection | |
| 4.5.4 | <input type="checkbox"/> What are the expenditures for developing information-sharing mechanisms and rapid information exchange on food safety? (This includes expenditure related to setting up the mechanism as well as the day to day expenses of running the system). <ul style="list-style-type: none"> ○ Expenditure on training, conferences, meetings of inter-sectoral steering committees ○ Communication and information exchange activities ○ Establishing systems of rapid warning and risk analysis on food safety | |
| 4.6 | Biosafety and biosecurity | |
| 4.6.1 | <input type="checkbox"/> What are the expenditures on the development/implementation of biological biosafety and biosecurity plans, development of tools, and diagnostics? <ul style="list-style-type: none"> ○ Developing biosafety and biosecurity plans ○ Implementing biosafety and biosecurity plans | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.6.2 | <input type="checkbox"/> What are the expenditures for comprehensive training of biological risk management experts and those who work with dangerous toxins and pathogens, animal health workforce? <ul style="list-style-type: none"> ○ Training for health managers at different levels ○ Training for managers in the veterinary sector at various levels | |

| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 4.6.3 | <input type="checkbox"/> What are the expenditures for monitoring, oversight, and enforcement of pathogen control measures and laboratory licensing? | |
| 4.6.4 | <input type="checkbox"/> What is government spending on vaccine and antiviral stockpiles and investments in research and development of new vaccines and antiviral drugs? | |
| 4.7 | Immunization | |
| 4.7.1 | <input type="checkbox"/> What is government spending on vaccine and antiviral stockpiles and investments in research and development of new vaccines and antiviral drugs <input type="checkbox"/> Research and development of vaccines <input type="checkbox"/> Antiviral stockpiles | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.7.2 | <input type="checkbox"/> Expenditure on the overall immunization program? <input type="checkbox"/> Expenditure on stockpiling of vaccines and antivirals Vaccines <ul style="list-style-type: none"> ○ Vaccination supplies ○ Professional activities at national level + four regions + auditing ○ Compensation activities ○ Local supporting activities | |
| Detection | | |
| 4.8 | National laboratory system | |
| 4.8.1 | <input type="checkbox"/> What are the expenditures on supporting the national laboratory system, including infrastructure, equipment, reagents, staff costs, training, PPE? <ul style="list-style-type: none"> ○ Expenditure on the construction of the national laboratories (including infrastructure, equipment) ○ Workforce ○ Purchase of biologicals, reagents ○ Training in capacity building ○ Purchase of personal protective equipment | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.8.2 | <input type="checkbox"/> What are the expenditures on laboratory quality assurance system? (This include transporting specimens from sub-national levels to national laboratories for advanced diagnostics). <ul style="list-style-type: none"> ○ Developing a standard operating procedure ○ Developing legal documents on biosafety at testing facilities ○ Setting up laboratory networks ○ Expenditure on transporting specimens from sub-national levels to national laboratories for advanced diagnostics | |



| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 4.9 | Real-time surveillance | |
| 4.9.1 | <input type="checkbox"/> What are the expenditures on the national surveillance system (human, animal, and environmental sampling) at national and sub-national levels, including the community level? (This includes surveillance officers, epidemiologists, commune health workers (CHW), commune animal health workers (CAHW), information and communication technologies (ICT) support, support, data integration between different surveillance systems, hotlines, equipment, etc.). <ul style="list-style-type: none"> <input type="checkbox"/> Investment in IT system for monitoring and updating infected cases <input type="checkbox"/> Expenditure on field supervisors (epidemiologists, village health workers, etc.) <input type="checkbox"/> Expenditure on full-time IT staff (full-time staff operating IT system, full-time/part-time staff supporting for monitoring, data analysis and update on national surveillance database) <input type="checkbox"/> Education and training for full-time staff in disease surveillance | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.9.2 | <input type="checkbox"/> What are the expenditures on reporting and notification? (This includes staff, materials, and communication). <ul style="list-style-type: none"> <input type="checkbox"/> Expenditure on building and developing a system of indicators, forms, records, and reports. <input type="checkbox"/> Expenditure on developing online reporting systems (teleconference). | |
| 4.10 | Reporting | |
| | Note: Reporting is not a standalone activity. It is embedded in every health security activity. So, the tracking is also considered as part of those activities. | |
| 4.11 | Workforce development | |
| 4.11.1 | <input type="checkbox"/> What are the expenditures on salaries and continuous education of field epidemiologists, lab technicians, bio-statisticians, and veterinarians? <ul style="list-style-type: none"> <input type="checkbox"/> Expenditure on human resources (salaries, allowances, bonuses, group/team welfare, and other contributions) <input type="checkbox"/> Allowance for staff who are responsible for supervision, surveillance, validation of epidemic, and participation in prevention and control of epidemics <input type="checkbox"/> Continuous education and training for health staff working in preventive medicine, epidemiologists, lab-technician, bio-statisticians, etc. <input type="checkbox"/> Training in the supervision of infectious diseases at district and provincial levels | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |

| Health Security Financing Assessment Questions | | Sources |
|--|---|---|
| Response | | |
| 4.12 | Preparedness | |
| 4.12.1 | <input type="checkbox"/> What are the expenditures to develop, update, and test national public health emergency plans, protocols, and standard operating procedures (SOP)? (This includes staff, communication, simulations, resources for outbreak investigation, etc.) <ul style="list-style-type: none"> ○ Developing public health emergency plans ○ Developing scenarios and simulation-based emergency response plan ○ Testing the preparedness of Ministries and local governments ○ Practicing for emergency response activities ○ Establishing the steering committee and centers for epidemic prevention and control | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.13 | Emergency response operations | |
| 4.13.1 | <input type="checkbox"/> What are the expenditures for emergency operations centers (EOC) and related services? (This includes capital and operating costs, training, IT, communication, etc.) <ul style="list-style-type: none"> ○ Allowance for epidemic control ○ Medicines, chemicals, and materials for epidemic control ○ Chemicals and biologicals for testing in epidemic prevention and control ○ National reserves of medicines for epidemic prevention and control ○ Purchasing and repairing equipment, printing, and etc. for epidemic prevention and control ○ Fuels ○ Hiring services ○ Cross-border and point of entry control for epidemic prevention and control ○ Vaccination, isolation, and transport of potentially infectious patients ○ Localization for epidemic control | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.14 | Linking public health and security authorities | |
| 4.14.1 | <input type="checkbox"/> What are the expenditures on training, planning, and coordinated exercises with security forces? (This includes exercises to test information sharing with security forces and others; training) <input type="checkbox"/> Need to differentiate between IHR coordination as routine mode and these expenditures concerning with inter-sectoral coordination and linkage in the context of an epidemic occurred. <ul style="list-style-type: none"> ○ Seminars/meetings/workshop ○ Epidemiological surveillance ○ Training in supervision, detection and control the newly emerging pandemic ○ Training for mobile teams in active prevention and control of epidemics ○ Practicing activities of mobile team for prevention and control of epidemics ○ Inter-sectoral supervision and inspection | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |



| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 4.15 | Medical countermeasures and personnel deployment | |
| | 4.15.1 <input type="checkbox"/> What are the expenditures for updating, testing the national framework for sending, and receiving medical countermeasures during public health emergencies? (This includes for training, exercises, and meetings, etc. for medical countermeasures). <input type="checkbox"/> Unscheduled directive requests/orders for epidemic prevention and controls | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.16 | Risk communication | |
| | 4.16.1 <input type="checkbox"/> What are the expenditures related to developing/updating/ implementing, disseminating a national risk communication plan? (This includes equipment, training, and implementation costs) <ul style="list-style-type: none"> ○ Developing health communication plan following the direction and master plan of the health sector ○ Developing materials for sections presented in local websites or emergency news on local TV channels (provincial level) ○ Purchase of equipment and materials for health communication activities ○ Training in health communication skills, planning, the use of materials of risk communication for epidemic prevention and control ○ Producing communication programs broadcasted on local radio or television or other channels ○ Implementing communication activities on high-risk community | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| IHR related hazards and points of entry (PoE) | | |
| 4.17 | Points of entry | |
| | 4.17.1 <input type="checkbox"/> What are the expenditures on PoE operating costs, including staff, training, transport, maintenance, equipment, materials diagnostics, etc., isolation/quarantine facilities? <ul style="list-style-type: none"> ○ Investment in construction of in isolation/quarantine facilities, purchase of equipment for diagnosing, screening and detecting infectious cases supervised at PoE ○ Activities of isolation/quarantine the potentially infected patients/subjects at PoE (e.g., operation costs, including patient transportation) ○ Expenditure on processing dead bodies of human and animals across borders ○ Expenditure on isolation and process for equipment and goods (including hiring the storages, workforce, chemicals, disposal of hazardous sites, etc.) ○ Investment in infrastructure, equipment ○ Expenditure on hiring the storages, workforce, purchase of chemicals ○ Expenditure on reporting and exchanging information on cross-borders epidemics (e.g., meeting, technical exchange workshop) ○ Expenditure on inter-sectoral collaboration activities at PoE in epidemic supervision (PoE managers, border guard, custom, etc.) ○ Training for staff working on quarantine | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |

| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 4.18 | Chemical events | |
| 4.18.1 | <input type="checkbox"/> What are the expenditures on chemical events? (This include preparation of emergency plan, and manual, surveillance of chemical risks and events, medical responders, poison center and management and disposal of hazardous sites). <ul style="list-style-type: none"> ○ Training in supervision, assessment, and response to chemical or poisoning events ○ Expenditure on activities to respond to chemical events in centers for poisoning control ○ Expenditure on managing hazardous sites ○ Expenditure on supervision of chemical and risk events | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.19 | Radiation emergencies | |
| 4.19.1 | <input type="checkbox"/> What are the expenditures on radiation emergencies? (This includes emergency response plans for radiation emergencies, development, and evaluation of technical guidelines for radiation management, human health surveillance units, and coordination and communication). <ul style="list-style-type: none"> ○ Developing the technical guidelines or SOP for the management of radiation emergencies ○ Supervision and assessment of risk and radiation events ○ Training for health staff in providing care of victims of radiation emergencies | <input type="checkbox"/> Survey administered on ministries, agencies departments at national and sub-national level as well as donors using structured questionnaires |
| 4.20 | Recovery | |
| 4.20.1 | <input type="checkbox"/> Is there an established mechanism to forecast financing needs for recovery efforts, including compensation to farmers? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 4.20.2 | <input type="checkbox"/> What additional finances are likely to be available to support recovery efforts: <ul style="list-style-type: none"> ○ Social protection services? ○ Supporting productive economic activities, including training, restocking, etc.? ○ Health services, etc.? | |
| 4.20.3 | <input type="checkbox"/> What are the sources of recovery finances? <input type="checkbox"/> Are there sources of external financing that the government can draw from in case of an emergency (such as pandemic emergency financing facility (PEF), catastrophic deferred drawdown option (Cat-DDO), regional conditional financing, etc.)? | |
| 4.20.4 | <input type="checkbox"/> Is there insurance against the potential loss of life and or livelihoods related to health emergencies? | |
| 4.20.5 | <input type="checkbox"/> What are the possible sources of financing to compensate for animal culling in health emergencies? | |



| Health Security Financing Assessment Questions | | Sources |
|--|--|---|
| 5 | <p>Efficiency and sustainability of health security financing</p> <p><i>Measuring (in)efficiency and sustainability will require information beyond what can be accomplished through the health security financing assessment. The assessment will provide baseline data on the current state of financing; however, this information will need to be collaborated with additional comparable data to assess efficiency and sustainability, which at the moment might not be available... . . .</i></p> | |
| 5.1 | Efficiency | |
| 5.1.1 | <input type="checkbox"/> Measure leakages as an alternative measure of efficiency: Use a nationwide or sector-specific measure of leakage (e.g., governance-related country policy and institutional assessment (CPIA) scores, international transparency ranking, and others). <ul style="list-style-type: none"> ○ Is there any waste/leakage of health security funds observed? ○ If yes, what is it? Is there any measurement of this waste/leakage? (e.g., governance-related CPIA scores, international transparency ranking, and others). | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 5.1.2 | <input type="checkbox"/> Measure the efficiency of allocation: What is the distribution of investment in prevention and response/recovery? Is the allocation of resources between preventive, detection, and response sensible? <ul style="list-style-type: none"> ○ What is the distribution of investment in prevention and response/recovery? ○ Is the allocation of resources between preventive, detection, and response sensible? | |
| 5.1.3 | <input type="checkbox"/> Measure overlaps and duplications between the human and animal health services and possible efficiency gains in implementing the One Health approach. | |
| 5.1.4 | <input type="checkbox"/> How is emergency procurement planned and implemented? | |
| 5.2 | Sustainability | |
| 5.2.1 | <input type="checkbox"/> What is the role of external financing? <input type="checkbox"/> What is the share of development aid? regional partnerships? | <input type="checkbox"/> Desk review of relevant policies and reports <input type="checkbox"/> In-depth interview of key experts from ministries and agencies at the national and sub-national level |
| 5.2.2 | <input type="checkbox"/> Can the current level of spending on health security be maintained without donor financing? | |
| 5.2.3 | <input type="checkbox"/> What proportion of the approved budget is spent? | |
| 5.2.4 | <input type="checkbox"/> How are procurement decisions made in an emergency to ensure the efficient and equitable use of funds? What safeguards are in place to provide value for money? | |

Definitions

“All-hazards” approach: An approach for prevention, protection, preparedness, response, and recovery that addresses a full range of threats and hazards, including natural and human-made disasters, accidental disruptions, and other emergencies.

Business continuity planning: The creation of a strategy through the recognition of threats and risks facing a country or company, to ensure that personnel and assets are protected and able to function in the event of a public health emergency or disaster.

Health Security: The protection of human and animal health from infectious diseases and other public health risks and emergencies. It requires multisectoral proactive and reactive activities to minimize vulnerability to human and animal health events that endanger the collective health of populations across geographical regions and international boundaries.

Ministry of Agriculture: This could also refer to livestock, fisheries, wildlife or could be a separate ministry

One Health: An approach to improve health and well-being through the prevention of risks and the mitigation of effects of crises that originate at the interface between humans, animals, and their various environments. It promotes a multi (cross) sectoral and collaborative approach and a “whole of society” approach to health hazards, as a systemic change of perspective in the management of risk.

Off budget: Funded outside government budget, e.g., by donors and other agencies.

Public health emergency: This is defined as “an occurrence or imminent threat of an illness or health condition, caused by bioterrorism, epidemic or pandemic disease, disasters, or (a) novel and highly fatal infectious agent or biological toxin, that poses a substantial risk of a significant number of human fatalities or incidents or permanent or long-term disability.

Recovery: This includes restoring essential health and social services, getting all children back in school, farmers back planting in their fields, businesses back up and running, and investors back into the countries. It is about countries reigniting their economies, tackling economic and social disruptions, and strengthening their health systems, and building back improved infrastructure and systems.

Regional functions conducted by regional organizations: These address cross border aspects of infectious disease include coordinated actions on economic cooperation, surveillance, sharing information, training, reference laboratories and laboratory networks, quality assurance, diagnostic protocols, etc. Examples include the Association of Southeast Asian Nations, Asia-Pacific Economic Cooperation, Mekong River Basin.

Stakeholder Mapping Analysis: A methodology used to facilitate institutional and policy reform processes by accounting for and often incorporating the needs of those who have a ‘stake’ or an interest in the reforms under consideration. Stakeholders can be of any form, size, and capacity. They can be individuals,

organizations, or unorganized groups. In most cases, stakeholders fall into one or more of the following categories: international actors (e.g. donors), national or political actors (e.g. legislators, governors), public sector agencies (e.g. MDAs), interest groups (e.g. unions, medical associations), commercial/private for-profit, nonprofit organizations (NGOs, foundations), civil society members, and users/consumers.

“Whole-of-government” approach: An approach that integrates the collaborative efforts of the departments and agencies of a government to achieve unity of effort toward a shared goal. Also known as the interagency approach.

“Whole-of-society” approach: An approach that includes all sectors of society, including governments, businesses, and civil society, and local communities.

References

- Delquigny, Thomas, et al. 2004. Evolution and impact of avian influenza epidemic and description of the avian production in Vietnam, Final Report. Hanoi: Vétérinaires sans Frontières.
- FAO. 2016. Legacy Document: 8 years of immediate technical assistance activities strengthening emergency preparedness for HPAI in Viet
- Global Preparedness Monitoring Board. 2019. A World at Risk: annual report on global preparedness for health emergencies. Geneva, World Health Organization. Licence: CC BY-NC-SA 3.0 IGO.
- Government of Vietnam. Year XX. "Decision No. 297/GDD-TTg on the establishment of the national steering committee for Human Influenza Control."
- Government of Vietnam. 2004. "Decision 139/QD-TTg on allocation of budget for MARD to prevent and control of Avian Infulenza.
- Government of Vietnam. 2004. Decision 906/QD-TTg on allocation of budget for preventing and controlling Avian Infulenza and recovery of poultry production."
- Government of Vietnam. 2005. "Directive No. 25/2005/CT-TTg on the vaccination for poultry."
- Government of Vietnam. 2005. "Decision 321/QD-TTg on allocation of budget for preventing and controlling Avian Infulenza."
- Government of Vietnam. 2005. "Decision No. 1259/QD-TTg approving "Plan for stockpiling Tamiflu and producing Osetamivir for prevention and control of A viral (H5N1) influenza in Vietnam."
- Government of Vietnam. 2005. "National Preventive Plan to Respond to H5N1 and human influenza."
- Government of Vietnam. 2006. "Decision 01/QD-TTg on allocation of budget for MARD to prevent and control Avian Infulenza."
- Government of Vietnam. 2006. "Decision No. 348/2006/QD-TTg on amendment of Official Decision on the National steering committee for Human Influenza Pandemic Prevention and Control."
- International Monetary Fund (IMF). 2017. Vietnam 2017 Article IV Consultation Staff Report. Washington, D.C.: IMF.
- MARD. yearXX "Decision No. 3400 QD/BNN & PTNT on emergency preventive plans for highly pathogenic avian influenza control in Vietnam."
- MARD and MoH. 2006. "National Plan of Action for Avian and Human Influenza (OPI), 2006–2010" (Green Book)
- MARD and MoH. 2006. "National Master Plan for Avian Influenza and Pandemic Influenza Prevention and Control and Reponse to Human Influenza Pandemic, 2006–2008." (Red Book)
- MARD and MoH. 2011. The Vietnam integrated national operational program on avian influenza, pandemic preparedness, and emerging infectious diseases (AIPED) 2011–2015. (Blue Book)
- MARD and MoH. 2016. The Vietnam One Health Strategic Plan for Zoonotic Diseases, 2016–20.
- McLeod A., Morgan N., Prakash A., and Hinrichs J. 2005. Socio-economic impacts of avian influenza.

- Intervention at Donor Meeting in Geneva. Rome, FAO.
- Minh Quan Tong, and Minh Hoang Nguyen. 2019. GRDP by province [Data set]. Zenodo. <http://doi.org/10.5281/zenodo.2643301>
- Ministry of Trade. 2005. "Decision No. 3024/2005/QĐ-BTM Plan for Avian Influenza Prevention and Control of Ministry of Trade."
- MoH. 2005. "Decision No. 04/QĐ-BYT on designating contractors for procurement of 10 preventive items and 5 types of respirators."
- MoH. 2005. "Decision No. 38/2005/QĐ-BYT on the National Plan of Action on Human Influenza Pandemic Preparedness in Vietnam."
- MoH and Health Partnership Group. 2016. Joint Annual Health Review 2015: Strengthening primary health care at the grassroots towards universal health coverage. Medical Publishing House, Hanoi, June 2016.
- Party Central Committee Secretariat. 2005. "Directive 53-CT/TW on implementing urgent measures to prevent avian influenza (H5N1) and pandemic influenza in humans."
- Politburo. 2004. Directive on mobilization of all sectors, organizations, and the public to involve in the epidemic prevention and control.
- Standing Committee of National Assembly. 2005. "Resolution No. 428/UBTVQH11 on allocating budget for avian influenza and human pandemic and prevention and control."
- The World Organization for Animal Health. 2007. Prevention and control of animal diseases worldwide: Economic analysis—Prevention versus outbreak costs.
- World Bank. 2004. Technical annex for a proposed credit of SDR 3.5 million (US\$5 million) to Vietnam for an avian influenza emergency recovery project. World Bank, Rural Development and Natural Resources Sector Unit East Asia and Pacific Region.
- World Bank Group. "Pandemic Preparedness Financing-STATUS UPDATE, September 2019" Commissioned paper by the GPMB, www.who.int/gpmb
- Oppenheim, B., M. Gallivan, N. K. Madhav, N. Brown, V. Serhiyenko, N. D. Wolfe, P. Ayscue. 2019. "Assessing Global Preparedness for the Next Pandemic: Development and Application of an Epidemic Preparedness Index." *BMJ Global Health* 4: e001157.
- Teo, Hui Sin, et al. 2019. The Future of Health Financing in Vietnam: Ensuring Sufficiency, Efficiency, and Sustainability. Washington D.C.: World Bank Group.
- World Health Organization. 2005. International Health Regulations (2005), Second edition.
- World Health Organization. 2016. Joint External Evaluation of Vietnam. Mission Report. 28 October-4 November 2016.
- World Health Organization. 2018. Joint External Evaluation Tool. Second edition.

