Moving toward sustainability: A look beyond donor-dependent network structures

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Kaylee Myhre Errecaborde

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Jodi Sandfort PhD, Advisor

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Abstract

This dissertation research delves into the rise of the multilateral, multinational Global Health Security Agenda in 2014, and the subsequent global push toward collaborative, "One Health," governance as a solution to emerging threats at the interface of human, animal and environmental health. Using interpretive methods, the research examines the systems factors that influenced the development of structures for two collaborative networks–Multisectoral, One Health, Coordinating Mechanisms (MCMs)–in Thailand and Vietnam. Two primary questions were addressed: (1) how are MCMs established and institutionalized within national governments, and (2) how do structures frame the boundaries of MCM collaboration, either supporting or challenging efforts toward sustained government networks. In-depth interviews and document analysis of two comparative case studies in Thailand and Vietnam revealed that two systems factors, the influence of international donors and the capacity of MCM member organizations, were interdependent starting conditions for MCM development. These factors created paradoxical tensions that influenced MCM structures at the start of collaboration, creating challenges and opportunities for sustainable networks beyond donor funding. It was observed that MCM leaders, if aware, may be able to manage these interdependent tensions in support of network sustainability. As donor influence and funding is reduced over time, it requires a redistribution of tensions during the process of collaboration to support adapted network structures. The transfer and re-distribution of tensions can occur via new and adapted network policies, the development of transformational funding mechanisms, and leader support for critical connectors–key actors or champions within the network. If leaders are empowered to view the MCM as a dynamic structuration

process that requires the balancing and transferring of tensions, they may be better placed to maintain fluid collaborative junctures and sustain new inter-organizational pathways. However, these leaders face considerable challenges, including shifting government positions, reorganization, position vacancies and retirements, all of which create barriers to allowing leaders the competencies–knowledge, skills and attitudes, to manage and support structural adaptation over time. This research provides theoretical and practical insights into the development of sustainable networks that are supported, but not defined, by donor-led conditions at the start of collaboration.

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Abbreviations

AI	Avian Influenza
ASEAN	Association of Southeast Asia Nations
CDC	US Centers for Disease Control and Prevention
DLD	Ministry of Agriculture, Department of Livestock Development
DTRA	US Department of Defenses, Defense Threat Reduction Agency
EIDs	Emerging Infectious Diseases
EPT	USAID Emerging Pandemic Threats Program
GHSA	Global Health Security Agenda
HPAI	Highly Pathogenic Avian Influenza
ICD	Vietnam's International Core Operations Department
IHR	International Health Regulations
FAO	Food and Agriculture Organization of the United Nations
FETP	Field Epidemiology Training Program
JEE	Joint External Evaluation
JRA	Joint Risk Assessment
MARD	Ministry of Agriculture and Resource Development Vietnam
MCM	Multisectoral, One Health Coordinating Mechanisms
MERs-CoV	Middle Eastern Respiratory Syndrome Coronavirus
MNRE	Ministry of Natural Resources and Environment
MOA	Ministry of Agriculture and Cooperatives Thailand
MOEd	Ministry of Education Thailand
MOH	Ministry of Health Vietnam
MOPH	Ministry of Public Health Thailand
MOU	Memorandum of Understanding
NGO	Nongovernmental Organizations
OHCU	Thailand One Health Coordinating Unit
OHP	Vietnam One Health Partnership
OHSP	Vietnam One Health Strategic Plan
OIE	World Organisation of Animal Health
OT	Operational Tool
PAHI	Vietnam Partnership on Avian and Human Influenza
P&R	USAID Preparedness and Response Project
PMAC	Prince Mahidol Award Conference Thailand
PVS	Performance of Veterinary Services Pathway
RDMA	USAID Regional Development Mission for Asia
RFP	Request for Proposal
SARS	Severe Acute Respiratory Syndrome
SIS	Surveillance and Information Sharing
STOP AI	USAID Stamping Out Pandemic Avian Influenza
THOHUN	Thailand One Health University Network
TOR	Terms of Reference

TUC	Thailand US Centers for Disease Control and Prevention
TZG	Tripartite Zoonoses Guide
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
US	United States of America
USAID	US Agency for International Development
WHO	World Health Organization

Chapter 1: Introduction to the Study

The Global Health Security Agenda

Across the globe, national governments are facing increasing pressure to coordinate across sectors and disciplines for improved infectious disease prevention, detection, and response. In the past four decades, the world has seen an unprecedented rise in the emergence of infectious diseases. Over 75% of these emerging diseases are zoonotic in origin, meaning they can spread between humans and animals, and result from various anthropogenic, genetic, ecologic, socioeconomic, and climatic factors. (Taylor et al., 2001; Gebreyes et al., 2014). For example, HIV/AIDS, first contracted by a human from a primate in West Africa, highlights the complexity of disease emergence as humans interface with animals and their environment at increasing rates. Since 1981, HIV/AIDS has become a global pandemic killing over 35 million people. Yet in the decades since, the world has seen increasing rates of disease outbreaks, including the emergence of Severe Acute Respiratory Syndrome (SARS) epidemic in 2003, novel strains of Highly Pathogenic Avian Influenza (HPAI) in 1997 and in 2003, H1N1 'Swine' Influenza pandemic in 2009, Middle Eastern Respiratory Syndrome Coronavirus (MERs-CoV) epidemic in 2012, Ebola virus epidemics in West, Central and Eastern Africa in 2014, 2018, 2019 and, most recently, the Novel Corona Virus outbreak in 2019 (WHO, 2020; Taylor et al., 2001; DAI, 2017). These outbreaks highlight the emergence of human disease from animal origin, and demonstrate the need for cross-disciplinary coordination and collaboration to improve global disease preparedness and response. The 'One Health' concept, or the integrative effort of multiple disciplines working to attain optimal health

for people, animals, and the environment, has been increasingly recognized by experts globally as an essential approach global health challenges (Barrett et al., 2011).

In response to these emergent health threats, a global movement toward 'health security' was initiated. By 2014 the concept had garnered commitments from over 64 nations, international organizations and non-governmental stakeholders to establish the Global Health Security Agenda (GHSA). As a multilateral, multinational policy initiative, GHSA has supported collaborative, capacity-building efforts to achieve specific and measurable targets around biological threats, while accelerating achievement of core capacities required by the World Health Organization (WHO) International Health Regulations (IHR), the World Organization of Animal Health (OIE) Performance of Veterinary Services (PVS) Pathway, and other relevant global health frameworks (GHSA, 2014). In the years since, this initiative has resulted in global collaborations, linking GHSA milestones and evaluations with the WHO-led IHR, ultimately creating the International Health Regulation-Joint External Evaluation (IHR-JEE) to support countries to build and evaluate health capacity toward GHSA Action Packages and a series of IHR and JEE indicators for health resilience (JEE-IHR, 2005). The United States (US) alone, as a major investor in GHSA, has invested over $1 billion to support capacity building in 17 nations (Katz et al., 2019).

Looking ahead, and in accordance with the 2017 Kampala Declaration, which extended GHSA's mandate by 5 years, the GHSA Steering Group developed a GHSA 2024 Framework for the second phase of GHSA. The framework provides the context for GHSA's goals and objectives for 2019-2024 and an outline of how GHSA will operate and track progress to achieve intended health security goals (GHSA, 2018). The GHSA

initiative recognizes that government partners around the globe vary in their capacities and resources to address deficiencies in national health security capacity. Health ministries often lead these efforts through necessary engagements with partners. The GHSA efforts emphasize the need for strong multisectoral, One Health engagement, which includes human and animal health, agriculture, security, defense, law enforcement, development assistance, foreign affairs, research, and finance sectors, among others. As of September 2018, 65 participating countries representing 9 international and regional multilateral organizations and institutions are part of GHSA 2024 (GHSA, 2018).

As a result of this normative push toward collaborative One Health, and global health security, many international funding partners–donors–have suggested that collaborative governance platforms, or Multisectoral, One Health Coordinating Mechanisms (MCMs), could support more effective multisectoral preparedness and response efforts. These platforms are comprised of a network of ministerial-level organizations which include a minimum of human, animal and environmental health sectors. International donors have since poured significant resources into the development of MCMs in countries around the globe, concentrating development efforts around countries designated in global hotspots for disease emergence, namely countries in Africa and Southeast Asia. This dissertation research aims to explore the development of two MCMs, one in Thailand and one in Vietnam, as a response to global health security. In my role as a global health practitioner, I have seen firsthand the rise of the MCM as a normative solution to disease emergence and global health security. This was first, while working as an American Association for the Advancement of Science fellow with the US Senate Homeland Security Committee, and later through a combination of

my work for the US Agency for International Development's (USAID) One Health Workforce project (2014-2019), the WHO One Health team (2016-present), and finally, in my capacity as a public affairs PhD student/candidate (2016-present). At this confluence of oversight, research and practice, I have witnessed and grappled with the challenges that international donors and national governments are facing in sustaining these collaborative networks beyond traditional GHSA-supported donor funding. Although the collaborative work of MCMs is incredibly valuable and important, there exists a fundamental need to understand how MCMs can be structurally supported within national governments for long term sustainability beyond GHSA funding. As such, this exploratory study has been designed to address two primary research questions:

1. How are MCMs established and institutionalized within national governments?
2. How do structures frame the boundaries of MCM collaboration, either supporting or challenging efforts toward the development of sustained networks?

In the process of this research, I have sought to address these questions with inherent respect for the fundamental role that donors play in seeing these MCMs actualized, while probing into what supports or challenges the MCMs in sustainable structuration. The use of the term 'structuration' in this dissertation, refers to Giddens (1984) theory of structuration and his emphasis on the fact that 'structuration' brings together structure and human agency allowing for structural change over time. This interpretivist research provides important theoretical and practical insights for future more positivist-oriented research. Although this dissertation examines only two cases of MCM structuration, GHSA funding has supported the development of over 20 MCMs in Africa and Asia, and

there is much work that is yet to be done to support the intent to see collaborative outputs and outcomes for global health security.

A Historical View of Health Security

One of the first recorded references to the term 'health security' was in April 2000 when the Clinton Administration formally designated HIV/AIDS a threat to American national security (King, 2002). Earlier that year, a US National Intelligence Council report described HIV/AIDS and infectious disease in general, as a 'nontraditional threat' which it said would 'complicate US and global security over the next 20 years... endanger US citizens at home and abroad, threaten US armed forces deployed overseas, and exacerbate social and political instability in key countries and regions in which the US has significant interests (Noah & Fidas, 2000). The description of infectious disease as a security threat in early 2000 seemed novel, though public health as provided by developed nations has a long and arduous history tied closely with national security and international commerce.

International public health assistance has historically been provided by colonial governments in an attempt to protect the health and interest of colonials in foreign environments, and later to maintain the health of indigenous populations as a labor force (King, 2002). Efforts to modernize local populations were eventually used to justify colonialism as a humanitarian endeavor. The late 19th and early 20th centuries, largely culminating in World Wars I and II, became a time of significant social and demographic change, urbanization, industrialization, revolutions in transportation, and immigration. With migrating populations there came significant health issues. In 1942, the US Surgeon General created the Malaria Control in War Areas division of the Public Health Service

to control the disease in army training areas. During World War II, it was this defense program that was expanded and eventually became the US Centers for Disease Control and Prevention (CDC). In addition, with the end of WWII, a 1944 meeting in New Hampshire laid the groundwork for the formation of three major organizations which include the World Bank, the International Monetary Fund (IOM) and the International Trade Organization–now the World Trade Organization (WTO)–that were positioned to help the global post-war recovery. Thus the origins of public health are from a historical perspective, firmly situated within the social constructs of security and defence.

King (2002), as an anthropologist, refers to an 'emerging diseases worldview' which he identifies as arising in the late 1990s, forming the political discourse that has shaped traditional global health as a national security policy problem by early 2000. Through the emergence of subsequent diseases, the policy problem was continually redefined at many stages, ultimately shaping ensuing political action, dictating the stakeholders involved and policy and programmatic outcomes (Weiss, 1989). An IOM report from 1997 is often seen as inciting this world view by identifying several factors responsible for disease emergence, citing modernization through demographic changes such as migration, urbanization and population growth, environmental changes that included deforestation and climate change, among others. To address this risk, the report recommended the expansion and financial support of public health infrastructure and to strengthen the coordination between local, national and international public health institutions. The IOM report explicitly associated infectious diseases with American economic and security interests, arguing that 'distinction between domestic and international health problems are losing their usefulness and often are misleading,' and

the American polity should be concerned with global health, which they defined as 'health problems, issues, and concerns that transcend national boundaries, may be influenced by circumstances or experiences in other countries, and are best addressed by cooperative actions and solutions,' (IOM 1997). The IOM report set in motion a focus on security as a primary reason for investing in health in the new millennium. This world view was supported by subsequent outbreaks with pandemic potential, and ultimately, this resulted in the formation and endorsement of GHSA in 2014, and then again, in 2018.

Pandemic Influenza and the Real Threat to Global Health

A pandemic is an outbreak that causes morbidity and mortality across the entire world. In the 20th century, there were four influenza pandemics: 1918 (caused approximately 40 million deaths), 1957 (caused more than two million deaths), 1968 (caused approximately one million deaths), and most recently, H1N1, or Swine Flu, in 2009 (caused 500,000 deaths but infected 0.2% of the global population) (Dawood et al., 2009; WHO, 2005). Pandemics overwhelm health systems, and cause severe social disruption and economic losses. The WHO predicts that once a new strain of influenza emerges and is transmissible in humans, it can travel the globe within three months. New subtypes emerging from animals are particularly dangerous because the vast majority of the population will have no immunity (WHO, 2005).

Beginning in 1997, avian influenza (AI) outbreaks in Asia created enormous concern and continue to have pandemic potential. There are more than 100 identified subtypes of AI and these normally only infect birds and in rare instances, pigs (pigs have receptors for avian viruses). Although the first documented human infections with H5N1

AI occurred in 1997 in Hong Kong, the virus has remained in circulation. The 1997 outbreak in Hong Kong caused severe respiratory disease in 18 humans and killed six people. Rapid destruction of Hong Kong's entire poultry population, estimated at around 1.5 million birds, reduced opportunities for further transmission. However, a new outbreak of H5N1 AI in birds began in Southeast Asia in late 2003. WHO reports that 'between December 2003 and October 2005, more than 100 human cases of avian influenza and more than 60 deaths, caused by the H5N1 strain, were detected in Cambodia, China, Indonesia, Thailand and Vietnam' (WHO, 2005). In the years since, outbreaks of AI have caused millions of poultry infections, several hundred human cases, and many human deaths. The outbreaks in the region have seriously impacted livelihoods, the economy and international trade in affected countries. In 2013, human infections with a new H7N9 AI virus were reported for the first time in China. Since then, the virus has spread in the poultry population across the country and resulted in over 1500 reported human cases and many human deaths (WHO, 2005; CDC, 2019).

MCMs as a Response to Health Security

With the rise of the GHSA and the ongoing fear of pandemic influenza, many organizations have been asked or required to embrace the normative concept of One Health in their programs. This integrative and collaborative effort across disciplines recognizes that the emergence of disease is caught at the socio-cultural and economic interfaces of humans, animals, and the environment. One Health is highly regarded as a solution, or an accepted response, to complex global challenges such as infectious disease, bioterrorism, antimicrobial resistance, and emergency response for health, conflict and natural disasters (Barrett et al., 2011). The One Health concept challenges

organizations to reconsider their operations, their knowledge and their actions in a nontraditional way. As a result of the global funding for GHSA initiatives, many countries have adopted networks of health-related institutions, often called MCMs or National One Health Platforms. The MCMs can be any multisectoral platform, steering committee, task force or working group, and they are often supported or directed by national One Health policies, frameworks or guidelines (Tripartite, 2019). These national policies call for historically "siloed" institutions to work across boundaries to interact and plan for collaborative infectious disease prevention, detection and response. However, as discussed extensively in the literature, collaboration in any form is time and resource intensive, and it is not uncommon for people to feel frustrated or "collaborative inertia," in its application (Huxham and Vangen, 2005). With so much global support for these collaborative approaches, it becomes imperative that funders and national governments, working as partners, are able to understand what best supports the collaborative advantage and collective impact of developing MCMs as a response to health security.

Global Policy & Programmatic Responses to GHSA

Since the emergence of pandemic-potential AI in Southeast Asia in 2003, a suit of globally funded programs have arisen to support global health security and preparedness and response for trans-boundary diseases of pandemic potential, some of which focus specifically on MCM development. As described by Weiss (1989), problem definition does not need to be agreed upon to move forward with policy and at whatever stage a new problem definition gaines support, all the ensuing action is shaped, dictating who is involved and how this will result in outcomes. GHSA allowed for the original problem of pandemic-potential AI to be shaped and re-shaped into programs that target disease

emergence at the interface of humans and animals as they arise in 'global hot spots' for disease emergence (Allen et al., 2017). As a result, programs developed first in response to AI, have been continually reframed and often shifted and expanded beyond AI to feed into reporting that aligns with GHSA (GHSA, 2018; Kingdon, 1995; Weiss, 1989).

Two primary initiatives have weaved together to interface with and contribute to MCM development. This includes the USAID Pandemic Influenza and Other Emerging Threats program, and the formal WHO, OIE and Food and Agriculture Organization of the United Nations (FAO) tripartite initiative that coordinates global activities to address health risks at the human-animal-ecosystems interface. Both programs benefit and leverage shared funding from GHSA as it is allocated and distributed through USAID, CDC, and the US Department of Defense's, Defense Threat Reduction Agency (DTRA), among others. Over the years these programs have developed and coordinated their projected outputs and outcomes to align with GHSA reporting at a country level, aligning programmatic work with a number of the 11 GHSA Action Packages.

USAID Emerging Pandemic Threats 1 & 2

One of the primary programmatic responses to global health security in the US was through GHSA funding allocated for the USAID Pandemic Influenza and Other Emerging Threats Unit, which was established to support two major lines of work: H5N1 Avian Influenza, and Emerging Pandemic Threats.

H5N1 Avian Influenza

Since the 2005 outbreaks of HPAI in southeast Asia, USAID has created programs aimed at strengthening country capacity to monitor the spread of H5N1 AI in humans and birds. They have supported countries to create protocols for effective containment of the virus

when it was found, and to help countries prepare operational capacities in the event a pandemic capable virus emerges. One of the major programs initiated by USAID was the Stamping Out Avian Influenza Program (STOP AI). STOP AI was an emergency preparation, response, and recovery project, supported by Development Alternatives Incorporated (DAI) to provide technical resources and support services in preparedness planning, surveillance, and prevention; outbreak response; and re-infection prevention and recovery in 49 countries in Africa, Asia and Latin America (DAI, 2011). Working with US Government agencies, national governments, international and nongovernmental organizations (NGOs), and human and animal health experts, the project detected, responded to, and contained HPAI outbreaks in countries.

Emerging Pandemic Threats 1

As a complement and expansion of USAID's work on H5N1, and pre-dating GHSA, the Pandemic Influenza and Other Emerging Threats Unit launched the Emerging Pandemic Threats (EPT) program in 2009. This program was designed to pre-empt or combat disease emergence at the interface of humans, animals and the environment. Working with the CDC, four projects—PREDICT, PREVENT, IDENTIFY, and RESPOND—operated in 20 countries from 2009-2013. The EPT global program were aimed at developing and leveraging local and regional expertise from across the animal and human health sectors to build regional, national, and local One Health capacities for early disease detection, diagnosis, rapid response and containment, and risk reduction (USAID, 2016). However the program expanded the reach beyond AI to create programs that were aimed to prevent emerging disease. This program was hugely influential in creating a sustained political rhetoric for the formal problem definition of health security that then became GHSA in 2014.

USAID's initial work for both EPT-1 and AI became the foundations for another line of program funding from 2014-2019 which was launched alongside GHSA. Coinciding almost too perfectly with the launch, the Ebola virus became an epidemic in West Africa and garnered additional political support with Ebola-earmarked emergency funding supporting the EPT-2 programs directly. The EPT-2 program was designed to link three overarching projects which included the continuation of the EPT-1 RESPOND project which became the One Health Workforce project, the continuation of the PREDICT project under the same name, and the development of a new project called Preparedness and Response (P&R). The P&R project in particular, was working to enable national governments to establish and strengthen systems, policies, and practices for prevention, detection, response, and control of emerging disease threats, with particular emphasis on zoonotic diseases. P&R had two primary objectives: (1) Establish and Strengthen MCMs, or National One Health Platforms, and (2) Support the Development and Implementation of National Preparedness & Response Plans for public health emergencies of unknown origin. This project, similar to STOP-AI and RESPOND, was awarded to DAI. More than any other EPT program, this project solidified MCMs as a normative solution to emerging diseases. As a result, from 2014-2019 the world saw an influx in donor funding to support the development of MCMs in Africa and Asia. This included the funding that directly supported MCMs as developed in Thailand and Vietnam.

Tripartite Coordination to Address Health Risks at the Human-Animal-Ecosystem Interface

Although FAO, OIE and WHO have been working together for years, their formal collaboration as the tripartite was established via the FAO/OIE/WHO Tripartite Concept

Note in 2010. The Tripartite, through joint programs, advocates for effective, multi-sectoral collaboration, providing guidance and support for One Health challenges at the local, national, regional and global levels. This initial concept note was updated with the support of director generals across the three 'sister' organizations in 2017, creating a foundation for sustainable collaborations (Tripartite, 2010; Tripartite, 2017). As a result of this collaboration, there are two primary programmatic initiatives that have aligned and supported the development of MCMs: (1) The launch of the 2019 Tripartite Zoonoses Guide (TZG) and the associated operational tools, and (2) the IHR-PVS National Bridging Workshops that link into IHR-JEE and National Action Plans for Health Security. All of these One Health initiatives at the tripartite level are similarly supported through GHSA funding, often allocated and distributed through USAID, CDC and DTRA.

Taking a Multisectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries

Taking a Multisectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries, referred to as the TZG, was jointly developed by the FAO, OIE, and WHO and was launched in all six United Nations (UN) languages in 2019. A series of global multisectoral working groups, funded primarily through DTRA, supported the drafting of strategic chapters of the TZG which is actually an update of the previous 2008 guide. The updated 2019 TZG was developed with the intent to support countries in taking a multisectoral, One Health approach to address zoonotic diseases and provides principles, best practices and options to assist countries in achieving sustainable and functional collaboration at the human-animal-environment interface (Tripartite, 2019). Through ongoing support from USAID, DTRA and CDC, countries are supported

by seven operational tools that align with the technical chapters of the guide. At present, there are three operational tools in development: (1) the MCM Operational Tool (MCM OT), (2) the Joint Risk Assessment Operational Tool (JRA OT), and (3) the Surveillance and Information Sharing Operational Tool (SIS OT). Although all three tools are aimed at supporting One Health collaboration at the country level, the MCM was designed to directly support national governments to either establish or further develop their MCMs. Both the JRA and SISOT tools then link into and leverage the collaborations that occur through the national MCMs.

MCM Operational Tool

The TZG recognizes that historically, relevant government sectors manage zoonotic disease risks separately according to individual mandates, hierarchies, and funding streams. The TZG suggests that an MCM can allow countries to better coordinate the multisectoral, One Health approach to addressing zoonotic diseases through both leadership and technical functions. An MCM can thus be used to strengthen and develop collaboration, communication, and coordination across the sectors and achieve better health outcomes at a national and subnational level. As such, the Tripartite Workbook for Establishing or Strengthening MCMs for Zoonotic Disease in Countries, has been developed as an OT of the TZG and has been designed to support government ministries in their efforts to establish or strengthen their MCM. The MCM Workbook consists of a series of steps based on the principles of multisectoral, One Health coordination presented in the TZG. The process allows countries to: (1) Employ a multisectoral, One Health approach to MCM development and/or strengthening, (2) Gather information from relevant sectors about their past / current efforts in coordinating a multisectoral, One

Health approach to address zoonotic diseases and other shared health concerns, and (3) Facilitate and ensure consensus, coordinated action and sustained and transparent communication across all relevant sectors in planning, communication, advocacy, and implementation. At present, the tripartite working groups have developed the draft prototype and are preparing to implement four DTRA funded pilot workshops before finalizing the tool for global distribution. The MCM OT differs from the USAID funded OH-APP tool because it does not follow specific evaluation indicators and instead facilitates discussion around 18 key elements identified by the expert working group. As such, it is suggested that the MCM OT can support countries who are intent on establishing or further developing their MCM, while the OH-APP tool actually supports countries to iteratively evaluate their work around strategic capacity and performance indicators.

Joint Risk Assessment Operational Tool and the Surveillance and Information Sharing Operational Tool

Similar to the MCM, the Tripartite has led the development and pilot of the JRA OT to support countries in applying a consistent and harmonized approach to assessing risks posed by zoonotic disease hazards. The JRA process allows decision-makers from multiple sectors to build and implement science-based risk management and risk communication measures. These risk management approaches are agreed and supported among the various sectors, leading to alignment with sector-specific work as well joint implementation.

The SIS OT, led by FAO, is supporting national governments to coordinate across traditionally sector specific surveillance systems. This requires an integrated, One Health

approach. The tool presents a capacity building guide with key indicators that countries can self-assess their current status, while linking to available tools. The SIS OT is in the final phase of development and will be similarly supported by DTRA to pilot the tool in four countries. Both the JRA OT and the SIS OT specifically call out the role of MCMs, and where possible, requests that MCMs be the primary convener for the application of JRA and SIS OTs in countries.

IHR-PVS National Bridging Workshops

Similar to the guide, the IHR-PVS National Bridging Workshops bring together actors from the national ministries of health and agriculture. The workshops present a structured, guided methodology, allowing participants to collectively identify barriers to synergy and existing gaps in collaboration. Working collaboratively, participants build a road-map to improve the collaboration between the two sectors in the prevention, detection and response to zoonotic disease outbreaks and other health issues (food safety, food security, antimicrobial resistance). The workshops support WHO IHR-JEE and OIE PVS, ultimately linking into countries' National Action Plans for Health Security. The National Bridging Workshops provide a pathway for improved administrative and technical collaboration at a national level, while MCMs suggest that a coordinated network of One Health organizations and actors can best support the implementation of these road maps toward intended outputs and outcomes.

Overview of the Dissertation

This chapter has provided the relevant background for this dissertation study by introducing the phenomena of global health security, the rise of One Health and the normative emphasis on government-led MCMs as a solution to challenges that arise at

the interface of humans, animals and the environment. The next chapter will introduce the scope and significance of the study and will introduce the future challenges that MCMs will face as traditionally donor-led support mechanisms are reduced toward hopeful sustainability. Chapter three will review the relevant literature and conceptual frameworks that have formed the basis of this research. Chapter four describes the research methodology in detail and discusses the strengths and limitations of this study. Chapters five and six present the case studies in Thailand and Vietnam respectively, while chapters seven and eight outline the findings and discussions. Chapter nine provides a final summary and conclusion, suggesting next steps for application of this work and areas for future research.

Chapter 2: Situating the Study

Scope & Significance of the Study

The Research Problem

Pandemics infect the globe and remain the most significant threat to global health security. Since 2000, AI has killed hundreds of people in 14 countries, Ebola more than 11,000 people in 10 countries, and SARS over 700 people in 37 countries. HIV/AIDS was first contracted by a human from a primate in West Africa, and since 1981, AIDS has killed over 35 million people (DAI, 2017). These pandemic threats have acted as a catalyst, launching the political will for GHSA in 2014 and the revised and strengthened approach in 2018. As a result, the US government has enacted programs to strengthen country capacity to contain emerging diseases. Programs funded by US agencies and the tripartite organizations have catalyzed efforts and brought forward a collaborative, One Health approach to infectious disease response. Many of these programs have been credited with limiting the spread of AI and substantially strengthening outbreak response capacity across the globe.

As GHSA became a global initiative, USAID used the EPT-2 DAI-led P&R project to strengthen national systems in Africa and Asia by supporting the development of National One Health Platforms, or MCMs, in 14 countries (Agbo et al., 2019). The tripartite has similarly supported these collaborative efforts, dubbing MCMs as a normative solution to some of the most pressing health security challenges of our time. The 2019 TZG laid the foundations of MCM development, while continued funding from CDC, USAID and DTRA have supported the development of an MCM Operational Tool. The tool, created through an international expert working group as convened 2017-2020,

facilitates multisectoral government ministries to design their approach to either strengthen an existing MCM or develop an MCM if nothing currently exists. The tool will be finalized in 2020 and will be recommended by the tripartite organizations as a pathway to improved capacity for One Health response at the country level. In addition, USAID will continue support for MCMs through the EDiT Next Generation project awarded to FAO, a continuation of the work that was started by P&R. This program will continue providing funding for MCMs from 2019-2024. FAO will lead MCMs through capacity development through the continued use of the OH-APP tool developed under P&R and also the tripartite MCM operational tool which is set to be finalized in 2020. To date there exists no evidence as to what works or does not work in the structuration of MCMs, nor is there any reported documentation of how MCMs support effective multisectoral and collaborative One Health and ultimately better preparedness and response for emerging health challenges. The research outlined in this dissertation is an exploratory study of how MCMs have been established in Thailand and Vietnam. The research examines the structuration of these collaborative networks to better understand the boundaries of collaboration and the way in which individuals navigate those boundaries to achieve collaborative outputs and outcomes. Finally the research looks specifically at donor influence and how MCMs can become sustainable beyond donor funding.

MCMs in Thailand and Vietnam

Both Thailand and Vietnam have remained epicenters since the pandemic-potential outbreak of H5N1 in the early 2000s. As a result, both countries have been recipients of significant donor and national government investments for health security which has

resulted in the development of the Thailand One Health Coordinating Unit (OHCU) and the Vietnam One Health Partnership (OHP). As both countries approach nearly two decades of donor investments in these collaborative platforms, there is much insight to be shared with other countries who are considering the development of similar collaborative mechanisms.

Advancing Collaborative Scholarship Through the Study of MCMs

This work has been constructed at a meta-theoretical level, meaning that it aims to provide an overarching perspective (Ritzer, 1990) or paradigm (Qui et al., 2012), and is not constrained by particular contexts, variables or methods, and instead uses the cases to relate to central concepts of collaborative governance for a scholarly community (Lewis & Smith, 2014). As such, this research is designed to inform both theory and practice, ultimately introducing the interrelationship of meta-variables within a theorized and testable model. Through this research, I juxtapose paradox and organizational tension on the cross-boundary starting conditions and process-based conditions that are inherent in collaborative network development.

MCMs, at their core, are simply a case of collaborative network governance. In the last decade, GHSA funding has led to the development of MCMs in over 14 countries in Africa and Asia providing a unique and timely opportunity to study their development and their associated outputs and outcomes. In addition, many of these MCMs are in the process of transitioning away from donor funding. This research is intended to provide practical insights into the development of MCMs for improved capacity to prevent disease emergence, as well as look at the theory behind collaborative network

structuration and how different factors influence the fluidity of boundary spanning junctures, and ultimately, network structuration.

This work fills two documented gaps in the study of collaborative governance networks. First, this research integrates multiple theoretical frameworks and perspectives, helping to bridge the gaps between theoretical cross-boundary work and implementation theory, with that of more practice-oriented study of paradox, implementation science and collective action (Rethemeyer, 2005; O'Toole, 2014). In addition, many collaborative governance network studies have relied on single case studies. This remains a major challenge when considering the complexity inherent in the dynamic phenomena encountered in collaborative governance networks (O'Toole, 2014), and this work aims to explore two case studies and then propose more positivist-oriented research questions that can be considered in the contexts of MCMs as they have been initiated and further developed under GHSA funding.

The Research Questions

The practical and theoretical challenges encountered by MCMs in their development create a number of important questions that can be explored with empirical investigation to both improve practice and deepen theory. Using scholarship about the relationships between individual agency, and organizational and network structures as intellectual landmarks, the research questions were designed to explore how structures influence collaborative boundary-spanning junctures and how this may lead to flexibility or rigidity within the field of organizations and individual actors looking to collaborate. The term "structures," drawing from Ansell and Gash (2008), Stone et al., (2010), and Bryson et al., (2015) are defined in this study as any organizational and network legal and/or

procedural mandate or guideline, formal or informal, that affects the operational approach to interdependent goals. The research is intended to add to the theoretical and practical scholarship on how these structures influence collaborative efforts, while also supporting the development and establishment of improved collaborative structures so that actors within One Health networks can have the flexibility to adapt to emergent collaborative needs. Specifically, this study has been designed to explore the following research questions:

1. How are MCMs established and institutionalized within national governments?
2. How do structures frame the boundaries of MCM collaboration, either supporting or challenging efforts toward the development of sustained networks?

Chapter 3: Literature Review

Introducing the Literature

Scholars agree that collaboration occurs at multiple levels and requires a dynamic and emergent systems-based approach. Although many scholars have acknowledged the importance of structures in collaborative processes, the details on how institutional structures support or challenge cross-boundary collaboration are less clear (Selsky and Parker, 2005; Stone et al., 2010; Bryson et al., 2015; Huxham and Vangen, 2005). In fact, and as highlighted by Stone and Sandfort (2009), many institutional and organizational theories have been criticized for neglecting the role of individuals and social processes that alter structures within social fields (As cited to Barley & Tolbert, 1997; Cooney, 2007; Fligstein, 2001; Sandfort, 2003; Scott et al., 2006).

In looking across the literature on structuration theory, theory of fields, cross-boundary collaboration, paradoxical tensions, and collaborative emergence and adaptation, it becomes clear that although the nomenclature varies, individual workers are bound within their network, system or field, and are both constrained and supported by the structures in place. Understanding how structures support or challenge One Health collaborations, and how workers navigate this system of structures, may provide insight into how institutional and network adaptations occur, and which adaptations or existing structures support fluid and resilient cross-boundary junctures while also supporting interdependence/ equilibrium between organization and workers (Ansell and Gash, 2008; Emerson and Nabatchi, 2015; Quick and Feldman, 2014). A focus on transferring paradoxical tensions by building resilient junctures and interdependence within the network may support an enabling environment for One Health work (drawing from

Bryson et al., 2006; Ansell and Gash, 2008; Stone and Sandfort, 2009; Stone et al., 2010; Bryson et al., 2015; Quick and Feldman, 2014).

Structuration Theory & Theory of Fields

When situating MCMs within the literature, they can be viewed as creating distinct policy fields. A Policy Field as defined by Stone & Sandfort (2009), is "an identifiable set of elements in a specific environment that directly shape local public service provision. These elements include the structures created by institutions involved in the delivery of particular substantive programs and the way in which state and local actors interact with these structures," (p.1059). Giddens (1979, 1984, 1989) first proposed the theory of structuration and looked at the role of structures within organizations and networks, and how individual actors navigate these structures toward intended outputs and outcomes. He used the term 'structuration,' introduced earlier in this dissertation, which reflects the interactions between structures and individual agency, which may allow for the possibility of structural change over time. Giddens outlined the reflexivity of individual actors within their environments while drawing attention to the systems of power, and the role of structures as rules and resources that either constrain or enable those actions. Fligstein and McAdams (1997, 2012) built on this in their Theory of Fields, by recognizing that bounded networks of organizations (e.g. MCMs) carry out substantive policy and are situated in space and time to create a policy field in which individual actors have agency. Actors within a policy field will interact across the boundaries of other fields at the local, district/ provincial, national and international level (Stone & Sandfort, 2009). "Policy fields provide the arena in which implementation of a particular policy or program unfolds," (Sandfort and Moulton, 2015 p. 104). In the case of One

Health challenges, the policy field is supported through national One Health policies, framework or guidelines which require health ministries, most commonly human, animal and environmental health, to work collaboratively to address One Health issues in both formal and informal ways. Depending on the national context, policy fields will be shaped by the organizations involved, the national policies, frameworks or guidelines in place, and the actors that navigate that given field.

More so than Gibbens, Fligstein and McAdam drew attention to the collective action of individual actors within policy fields. The cross-boundary collaboration called for in One Health requires that actors navigate their fields, and influence how structures either support or challenge collaborative work. Individual or collective actors negotiate shared meaning and identity, mobilize action and navigate the people and environments within their field, thereby shaping and reshaping their collective action and the implementation of their work. This aligns with Dawes et al., (2009) in recognizing that the boundaries of a network or field, are created by structural and intellectual constructs. An actor's knowledge of their social system, or their field in the case of Fligstein and McAdam, informs their action and will reproduce social structures which influence and negotiate the boundaries of the field. Fligstein and McAdam (2012) go on to discuss the relationship between agency and structure, and point out that people are mired in social structures that exist beyond their control. The authors draw attention to how people operate within these structures, and probe which structures support collaborative social interactions, and which inhibit them. They note that to date much of this scholarly inquiry has remained abstract and unsuccessful at characterizing the relationship between agency and structure. In fact, "there is very little elaboration of a genuinely sociological view of

how actors enact structure in the first place and the role they play in sustaining or changing these structures over time," (Fligstein and McAdam, 2012 p. 6). This assertion provides a foundation for the exploratory research questions being asked in this dissertation. In addition, it points to further areas of research that can investigate individual agency in the transfer tensions over time.

Focusing the discussion around network structures, Stone and Sandfort (2009), building on Fligstein and McAdam in their policy field framework, propose a structured approach to "filtering elements of complex institutional structures while acknowledging the agency that individuals exercise to shape these structures," (p. 1072). Their framework draws heavily on institutional, structuration and network theory to consider how individual organizational behavior connects across boundaries within a policy field. The authors define a policy field as "an identifiable set of elements in a specific environment that directly shape local public service provision. These elements include the structures created by institutions involved in the delivery of a particular substantive program and the ways in which state and local actors interact with these structures," (p. 1056). They draw attention to how relationships create, shape and negotiate structures as they attempt to accomplish programmatic and policy goals. Drawing from Stone and Sandfort, it becomes clear that when investigating how actors navigate structures within their field, analysis is necessary at the (a) macro-level (e.g. policy and institutional factors), (b) meso-level (e.g. organizational and interorganizational forces), and (c) micro-level (e.g. the individual actors and the choices they make). Stone and Sandfort call attention to the role of the actor to reinforce structures or to use their agency to try and modify or subvert them. The work of this dissertation aims to understand elements of

all three levels as they interact with the MCMs, while the primary unit of analysis will be at the organizational and network levels.

Cross-boundary Collaboration

The collaborative governance and cross-boundary literature similarly provides insight into structuration and individual actor agency. This work highlights the role that structures may play both as the starting conditions of collaboration, or creating a structure to support the process of collaboration (Bryson et al., 2015). Stone, Crosby and Bryson (2010) provide a conceptual framework that emphasizes the iterative process in which structures and processes, influenced by their external environment and unique policy field, impact outcomes. Specifically they outline the lack of understanding around how collaborative governance affects member organizations and their structures, thereby influencing the dynamics of the field (Stone, 2000). Stone et al., (2010) draws attention to the structuration–legal mandates, guidelines, regulations–as both a hierarchical structure and a functional concept. This highlights the role, and potential of structures within member organizations of the network, as well as structures that impact the overall network operation or governance. These legal mandates are key drivers of actor interactions, and must be considered within the context of the given field. In addition, the role of power and the inherent hierarchies that operate within organizations, and within and across networks are likely to play an integral role in how actors operate within their fields, and shape, adapt or subvert their structures toward collective action. The authors use a diagram to suggest that governance structures and governance process interact and influence their domains within the context of their external environment. These processes interact and lead to collaborative outcomes.

Paradoxical Tensions and Organizational Structuration

As organizational environments become more global, dynamic, and complex, researchers and practitioners are increasingly interested in how paradoxical tensions play out within organizations. Smith and Lewis (2011) note that relatively little attention has been paid to the opportunities offered by tensions within organizational structuration, pointing to the value in using structural paradox in organizational theory. They define paradox as 'contradictory yet interrelated elements that exist simultaneously and persist over time,' (Smith & Lewis, 2011 p. 382). Johnson (1996 & 2014) similarly characterizes this interdependence as an energy system that flows between the two poles, causing tension in the system. This energy system requires management and balancing, not exclusive solutions. This counters a traditional research approach in which tensions are viewed as problems, solvable through rational analysis and formal logic. In contrast, a paradox lens allows for a holistic understanding of tensions and cognitive and social influences on decision making (Poole & Van de Ven, 1989, Smith & Lewis, 2011, Jarzabkowski et al., 2013). Although using paradoxical tensions to explore organizations and management is relatively new, there is a growing recognition that organizational and management theory must encompass the inherent paradoxes that are present in social organizations (Quinn & Cameron, 1988; Poole & Van de Ven, 1989).

A paradox lens emphasizes reinforcing cycles, linking central concepts via iterative dynamics. Tensions are viewed as ubiquitous and persistent forces and paradoxical thinking entails a both/and mindset. Lewis (2000) explains, that paradoxical tensions appear as reinforcing cycles, which they describe as "vicious" or "virtuous." From a paradox perspective, organizational structuration arises from actors' responses to

these tensions. A Vicious cycle is described as resulting when actors respond to a paradox by choosing either/or and assuming that the paradox is a problem to be solved. For example, looking at collaborative network starting conditions and assuming that poor outcomes could have been solved by choosing one starting condition or another. However, if network actors can visualize the interdependence of paradoxical tensions, this can support a management approach that allows for creativity, learning, and the emergence of new ideas or approaches–often sighted as virtuous. Lewis (2000), citing (Huxham and Beech, 2003, Huy, 2001), states that 'when approached carefully, paradoxical understandings of organizational tensions might foster reflective managerial strategies that enable virtuous cycles of learning, whereas holding too tightly to singular intervention approaches may spur vicious cycles' (p. X). By understanding paradoxical tensions, individuals may consider improved management approaches that support intended organizational outputs and outcomes, ultimately enhancing performance and sustainability.

Smith and Lewis (2011) provide important insights into the use of paradox thinking in theorizing about organizational tendencies. First, organizations are complex and are comprised of interwoven subsystems. While subsystem may operate independently, the systems outcomes, and collaborative advantage, depend on their interdependence (Smith and Lewis, 2011; Katz & Kahn, 1966; Simon, 1962). Second, the authors go on to note that subsystems can iteratively develop and adapt, influencing the system. Finally, they note that paradoxical tensions, when misunderstood, may be exacerbated lending toward a vicious cycle rather than a restorative, virtuous cycle that support collaborative outputs and outcomes. Thus, with these ideas in mind, a paradox

lens can support researchers to layer conflicting perspectives and subsystems in search of new theories.

Collaborative Emergence & Adaptation

As noted throughout this review, many authors point to the role of structural adaptation. Huxham and Vangen (2005) draw attention to the "dynamics" of structuration, and the way in which member organizations change their structures over time, while Bryson et al., (2015) discusses the need for structural and procedural ambidexterity. As discussed above, Stone and Sandfort (2009) in their policy field framework acknowledge the agency that individuals exercise to shape structures. Further to this, Stone et al., (2010) provides a conceptual framework that emphasizes the iterative process in which structures and processes, influenced by their external environment and unique policy field, impact outcomes. Structural adaptation was similarly addressed by Fligstein and Mcadam (2012), noting that the boundaries of strategic action fields will change, expanding, shifting and contracting depending on the social issue. The individual agency of actors allows them to "break away" from normative actions and shift social structures, and actors work to produce and reproduce their positions in social structures. Finally, paradox studies have also pointed to outcome variability and how tensions create systems for adaptation and emergence at many levels (Poole & Van de Ven, 1989, Smith & Lewis, 2011, Jarzabkowski et al., 2013).

Emerson, Nabatchi and Bolough (2010) in their integrative framework, address many core tenants of collaborative networks (they use the term collaborative governance regimes) discussed by previous scholars, but add to the scholarship with their assessment of network *adaptation*, and their proposition that collaborative networks "will be more

sustainable over time when they adapt to the nature and level of impacts resulting from their joint actions," (p.20). In 2015, Emerson and Nabatchi came together again to propose a performance matrix for evaluating the networks across three units of analysis: the participant organization, the collaborative governance regime and the target goals, and look at three distinct performance levels: Actions/ Outputs, Outcomes and *Adaptations*. They went as far as to provide examples of what networks may characterize as performance in each of these domains, which include the adaptations of structures. All of this begs the question, how do network adaptations iteratively impact the structural contingencies for network effectiveness as outlined in the collaborative literature (Bryson et al., 2006, 2015; Ansell and Gash 2008; Emerson, Nabatchi and Balough, 2011; Emerson and Nabatchi, 2015). The variability of network adaptations of structures may influence network effectiveness and the work of the individual worker.

Finally, Quick and Feldman (2017) highlight the role of public managers in collaboration, focusing on how boundaries can act as barriers to collaborations or as junctures that enable important connections. The authors identify practices that promote enhanced and more flexible and resilient connections, these include translating across differences to create a new or shared domain, aligning among differences to acknowledge them and enhance connections across them, and decentering differences to displace the importance by finding new ways to work together. Their framework for practitioners and specifically managers, supports boundary work toward resilient collaborative processes, while avoiding the rigidity that can occur with tasks, and more specifically with rigid structural components. Their work acknowledges that structures can cause unnecessary rigidity which influences the ability for managers to collaborate effectively. Dawes et al.,

(2009) similarly focuses on the role of public managers, and the agency they have to confront social, intellectual and structural boundaries through structural, managerial and professional capabilities (Dawes et al., 2009).

In this literature review, the boundaries of this work have been outlined to place MCMs as distinct national policy fields that operate across other fields at local and international levels. These MCM policy fields are comprised of structures and actors. Structures, and the inherent interdependent tensions that influence them, are negotiated, enacted and adapted in emergent collaborative processes that occur across organizational and network boundaries in ways that may support or challenge those collaborative processes (Fligstein and Mcadams, 2012; Stone & Sandfort, 2009; Stone, 2000). Finally, the role of the individual actor, leader or manager is crucial to understanding how structures are used to create boundary-spanning junctures (Stone and Sandfort 2009, Quick and Feldman, 2014; Dawes, 2009), and in what part of the system–starting condition or process–they are most influential (Bryson et al., 2015). Regardless of theoretical underpinning, structures are central to collaborative work, and actors may be highly influential in how structures are enacted, maintained and adapted over time to influence collaborative processes and outcomes. By purposefully probing the role of structures to create boundary spanning junctures, this research is well placed to inform which structures support or challenge collaborative work, and how they are adapted during emergent and collaborative processes. This will lay a foundation for further work that studies the role of the individual actor within this process, and the ways in which collaboration is evaluated and iteratively improved toward sustainable networks.

Chapter 4: Methodology

Overview of Case Study Methodology

Given the limited empirical evidence available to understand how MCMs are formed, and how their current structures support or challenges One Health collaborations, an exploratory study of two cases has been chosen as the research design. Case study methods are suitable, and often preferred, for research focused on answering questions of "How?" and "Why?" and when the focus of the research is on context-driven for a real-life phenomenon (Yin 2009). Each case is considered an empirical description of a particular instance of a phenomena, and multiple cases, when appropriately selected for the study, will offer additional data sources for comparison, and are often considered more robust than a single-case study approach (Yin, 2009 as cited in Yang, 2016).

To investigate the research questions posed for this study, three data collection methodologies were employed across national cases in both Thailand and Vietnam. The data was collected through (1) review of key MCM policies that set the boundaries of collaboration, (2) semi-structured qualitative interviews, and (3) analysis of field notes, and a review of the monitoring framework results from the One Health Assessment for Planning and Performance (OH-APP) that has been conducted for each case. This convergence of evidence, also known as data triangulation, is especially important in qualitative research where researchers can never fully capture an objective "reality." By using multiple sources of evidence and measures of the same phenomenon, data triangulation will strengthen the internal validity of this study (Merriam, 2009: Patton, 2014; Yin 2009).

In addition, my role as a researcher and a global health practitioner, I have seen first-hand the rise of the MCM as a normative solution to disease emergence and global health security. As introduced above, my role as a practitioner has given me a strategic lens for exploring these cases of MCM development. This research is thus informed by my work as an American Association for the Advancement of Science fellow with the US Senate Homeland Security Committee where I observed first-hand the political rhetoric that gradually became the GHSA. Later, through a combination of my work for the US Agency for International Development's (USAID) One Health Workforce project (2014-2019), the WHO One Health team (2016-present), I was able to interact with MCMs in Africa and Asia. It is at the confluence of oversight, research and practice, and in consultation with researchers and practitioners in public affairs and global health, that I have arrived at the qualitative methodology employed for this dissertation.

Finally, this research has been designed to explore the structuration–individual agency and network structures that converge, leading to structural change over time–of MCMs in Thailand and Vietnam. As a result, the unit of analysis was multidimensional and I sought to conceptualize the network from multiple levels of analysis which included the individuals, their participating organizations and the network itself. Because these MCMs are a case of collaborative governance, it was imperative that the research methods support an analysis from multiple sectors and disciplines as they participated in the MCMs.

Case Selection

From May-August 2018, I participated in a series of One Health Systems Mapping and Analysis (OH-SMART) workshops conducted with multisectoral government and

ministerial representatives in Thailand and Vietnam. As a result of this One Health mapping engagement, it was obvious to me that these two MCMs, or cases, had very different operating government structures, ministerial engagements in the MCM policy fields, and history of One Health efforts. As a result, these cases were purposefully selected as information-rich examples of government approved, or supported, cross-boundary ministerial engagement. Each of the selected countries have operating One Health policy(ies), framework(s) or guideline(s)–hereby referred to as "policies," both formal and informal, that instruct or promote collaborative cross-ministerial engagement. These policies, along with donors, and the collection of member organizations and actors operating in response to them, create national MCM policy fields. Through my professional work in practice, I was able to gain first-hand knowledge by observing of how these individuals engaged across their traditional disciplines toward collaborative outputs and outcomes. I was able to uncover challenges in operational collaboration for issues such as zoonotic disease response, antimicrobial resistance national action planning, and One Health workforce development. This study has been designed to employ an interpretivist approach to explore how MCMs have developed and how structures support or challenge collaborative efforts within the MCM policy field created for each case.

Data Collection

Policy review

For each case, it was important to understand the national context and governance and have knowledge of what national One Health policies were currently in use. These policies inevitably framed the policy field that was studied for each case study. The

primary policies reviewed included the 2013 and 2016 Memorandum of Understanding (MOU) in Thailand, and the Circular 16 in Vietnam. These policies, identified early in the study, informed the data collection process and provided context for the data collection in each national case. Additional policies were noted at later stages of the study and although they informed the analysis of data, they were considered secondary and less influential on the boundaries of MCM collaboration.

Semi-structured qualitative interviews

The primary data source for this study was in-depth semi-structured qualitative interviews with participants who could provide insight to all units of the analysis represented in the study–the individual, the member organization, and the network. As a result, interviews were conducted with individuals from MCM member organizations, both government and academic. In addition, the research focused on the influence of donors on structuration and thus donors were included as important participants in this study. Finally, the network, while conceptualized through all participants, was uniquely understood through staff who worked for the MCM secretariats. Because MCMs are designed to support a One Health approach, it was a deliberate choice to ensure that interview participants reflected the traditional One Health sectors for each country–human, animal and environmental health sectors.

Participants in the OH-SMART workshop were selected as representatives with key information, and decision-making authority for One Health issues. The OH-SMART workshops, at a minimum, drew participants from the traditional One Health ministries who were frequently informed by existing One Health policies. Participants involved in the study were workshop participants or were recommended by workshop participants.

They were selected based on their knowledge of One Health and their participation or knowledge of the MCM. Where possible, interviews were conducted in person before or after the OH-SMART workshops. If sufficient time was not available, interviews were scheduled during other trips to the region. In some cases, interviews were not able to occur in person and instead were conducted via skype. All interviews were conducted in English. Because the majority of participants spoke English as a second language, I made sure to have multiple ways of asking the same question and this was integrated into the interview protocol.

All interviews were semi-structured and followed the same interview protocol (Appendix A). The interview questions were designed to reflect themes that were represented in the literature as well as my own experience having worked and facilitated discussions within the MCMs in both countries. The interview protocol used open-ended questions that supported a rich discussion. This also allowed me to ask follow-up questions and gather information that was informed by the protocol and my own contextual knowledge of the cases.

After identifying the study participants and developing the interview protocols, I obtained an exemption from the University of Minnesota's Institutional Review Board to begin my study. All interviewees were informed of the purpose of my study and assured that their personal information would be kept confidential and their names would not be attached to any comments used in the report. I obtained verbal consent prior to initiating each interview. All interviews were digitally recorded with participant consent in order to produce written transcripts of each interview and ensure accuracy.

The final sample size was determined by the number of cases it took to reach saturation of information, meaning there were no novel ideas being presented for the case. Finally, interview data was further contextualized within the field notes captured during OH-SMART workshops, and the review of the OH-APP reports.

Field notes

The OH-SMART workshops in each country provide a robust opportunity to observe and listen to multisectoral stakeholders interact around One Health issue such as infectious disease preparedness, antimicrobial resistance action planning or One Health workforce development. The facilitated six step process allowed participants to openly discuss and at times negotiate their role within policy and program implementation. Structures within participant institutions and across the MCM policy field, and issues for the process of collaboration, or the starting conditions that preceded collaboration were discussed. These included, but were not limited to: time, trust and interdependence, imbalances in resources/ power, incentives for collaboration and history of success or conflict (Ansell and Gash, 2008; Bryson et al., 2006; Provan and Kenis, 2008). Field notes were taken throughout the entire data collection process from the beginning of the national OH-SMART workshops, through the interview processes and the conclusion of the workshops. A notebook was used throughout the data collection process to record interview notes, key people or events, initial impressions, emerging themes, surprising revelations, passing comments, new areas of inquiry, and potential next steps in my study. This notebook served as a collection of field notes used to capture new information in chronological order. These notes were later transferred to an online document that could then be coded for data analysis.

OH-APP Document Review

In addition to field notes, the OH-APP monitoring framework, developed through the support of the USAID P&R project (2014-2018), was applied in both Thailand and Vietnam. The OH-APP Monitoring framework consists of 6 organizational capacity domains and 6 organizational performance domains. The assessment reports were obtained for Thailand at a national level (2018) and a subnational level (2019), and in Vietnam at a national level (2018). All data sources have been detailed in Table 1.

Table 1: Data Sources

Case Studies	**Expected data sources**
Thailand (August 2018- August 2019)	2 National policies reviewed (2013 and 2016 MOU) 13 Qualitative Interviews Field Notes 1 National OH-APP Report 1 Subnational OH-APP Report
Vietnam (August 2018- August 2019)	1 National policy reviewed (Circular 16) 15 Qualitative Interviews Field Notes 1 National OH-APP Report

Table 2: Study Participants

Institutions	**# of individuals interviewed by case**

Donor Agencies	Thailand *CDC Thailand (1)* *USAID (1)* *DAI (1)* Vietnam *USAID (2)* *DTRA (1)* *DAI (2)*
Government Ministries	Thailand *MOPH (3)* *DLD (2)* *MNRE (1)* Vietnam *MOH (3)* *MARD (2)* *MoNRE (1)*
Academic Institutions	Thailand *Thailand One Health University Network (1)* *Mahidol University (1)* Vietnam *Vietnam One Health University Network (1)* *Haiphong University of Medicine (1)*

MCM Secretariat Staff	Thailand *OHCU Secretariat (2)* Vietnam *OHP Secretariat (2)*

Data Analysis

In qualitative research, data analysis is an ongoing process that occurs during data collection, as well as between data collection activities (Maxwell, 2012; Merriam, 2009). The analysis for this study was conducted as an interpretive and data driven analysis, allowing key themes to emerge from the data (Kvale and Brinkman, 2009). The MaxQDA software program served as the primary data analysis tool for this study. Data analysis began with the transcription of in-depth interviews and field notes and coding was designed around three flexible steps:

Step One: Deductive coding within cases to identify broad swaths of text that address both of the primary research questions. Large portions of text were coded to ensure that the context was fully captured for inductive coding in step two.

Step Two: Inductive open coding was conducted within each individual case. To support this process, multiple passes of coding took place to iteratively develop codes in response to each research question. Notes were taken during each round of coding, and the next round of coding was used to group higher level data in themes that represented the findings. This remained the most time-intensive aspect of data analysis because it required me to synthesize my understanding of the transcripts with the direct in vivo coding. To support this process, I used two methods of note taking. The first method was

to create notes within MaxQDA alongside any in vivo codes that brought up new or surprising ideas. In addition, I kept an excel sheet that accounted for new insights garnered during every single interview analysis. Using the excel, I was able to keep note of how my own thinking evolved in the context of each interview, linking important insights from one interview back to previous interviews. Finally, after all interviews had been coded and documented in the excel, I returned, with fresh perspective to the marginal notes recorded in MaxQDA. This ensured that I was creating the appropriate connection between the interview data as coded and the higher-level ideas I was synthesizing across multiple participants and my own lived experiences.

Step Three: Finally, axial coding was used to arrive at core themes. Where necessary, codes (categories and concepts) were related to each other via a combination of inductive and deductive thinking. Although the research was primarily data driven and interpretive, when appropriate, data analysis benefited from an element of concept-driven analysis. Concept driven analysis uses codes that are supported by the literature. For example, as reflected in the research questions, some structures were reported as relevant to the start of collaboration, while others were relevant to the process of collaboration (Bryson et al., 2015). This approach to data analysis, a combination of inductive and deductive techniques, benefits from a theoretical foundation informed by the literature, while also being flexible enough to incorporate emergent and substantive themes.

This step-wise approach to data analysis allowed for the thoughtful emergence of inductive codes within and across the selected cases. In addition, the flexible use of some deductive codes in latter steps allowed for the work to be theoretically informed by important constructs that supported the exploratory approach used for this study (Brower,

Abolafia, and Carr 2000). The coded analysis from the in-depth interviews and field notes was then cross-checked and supported with the results from the OH-APP monitoring framework reports. This triangulation of data added additional depth to the case studies and accounted for national contextual factors.

Finally, the themes were further developed during the writing and revising of this dissertation. Through multiple iterations, I was able to grapple with the data in the context of my lived experience working with MCMs in both countries. This allowed for additional time spent deconstructing and reconstructing the data until the pieces fit the narrative based on my experiences. As a result, multiple versions of the figures were refined and reworked to become the final analysis as presented in this dissertation.

Limitations

The primary limitation to this study was my perspective as a foreign researcher and the need to conduct interviews with participants that spoke English as a second language. To address this limitation I designed the interview protocol so that there were multiple opportunities to discuss similar areas of inquiry for the research questions. Because I have extensive work experience in the region, I am familiar with the accents and some of the phrases that can support clear communication. This proved immensely helpful as I was able to ask questions in new ways if a participant struggled to understand my area of inquiry. While I relied on transcripts for coding, I spent much time re-listening to interviews to ensure that they were transcribed appropriately and that the participants intonation and intent was accurately captured in my analysis.

Finally, it is important to recognize that the interpretive methodology used for this exploratory and interpretive study does not necessarily guarantee validity, or

generalizability. This research does, however, propose important findings that creates a foundation for additional exploratory and positivist inquiry that may be generalizable beyond the two cases studied here. A next step for this research may be to investigate a series of MCMs as they have been developed in the context of donor-driven interdependent starting conditions.

Chapter 5: Thailand One Health Coordinating Unit

Background of the Thailand MCM

The OHCU was founded on a long history of collaboration and partnership that arose from the 2003 pandemic-potential outbreak of H5N1 in Asia. Although China had been experiencing outbreaks of H5N1 since 1996, H5N1 presented as a regional threat at a time when the rhetoric of health security was circulating widely in global policy. This new-found international commitment to pandemic preparedness and specifically, One Health, provided international funding to support multisectoral partnerships in the region. As a result, an informal working group emerged in Thailand for AI. This initial collaboration helped make the case for why multisectoral collaboration was important and as Thailand faced the threat of AI, the government became more familiar with One Health and the necessity of collaboration between human and animal sectors.

In parallel to the preparedness seen for AI, Thailand was also collaborating regularly between the Ministry of Public Health Thailand (MOPH) and Ministry of Agriculture (MOA) Department of Livestock Development (DLD) for other zoonotic disease outbreaks like leptospirosis, tuberculosis, chikungunya virus and anthrax. However, it wasn't until 2009, when H1N1, then known as 'swine fever,' became a pandemic that ministries really began to see the necessity in strengthening their collaborations. Some speculate that this was in part a result of the common name of H1N1 referring to swine and creating fear and uncertainty among both the public and the collaborating ministries about whether there was any credible threat to human health and wellness. This spurred a truly coordinated approach and ministries began hosting an annual epidemiology seminar where they invited additional sectors to participate in the

discussion of current and future disease threats. This seminar fed into a discussion which fostered what was first called a 'One Health Network,' to more formally allow for collaborative infectious disease preparedness among multiple interested ministries and organizations in Thailand.

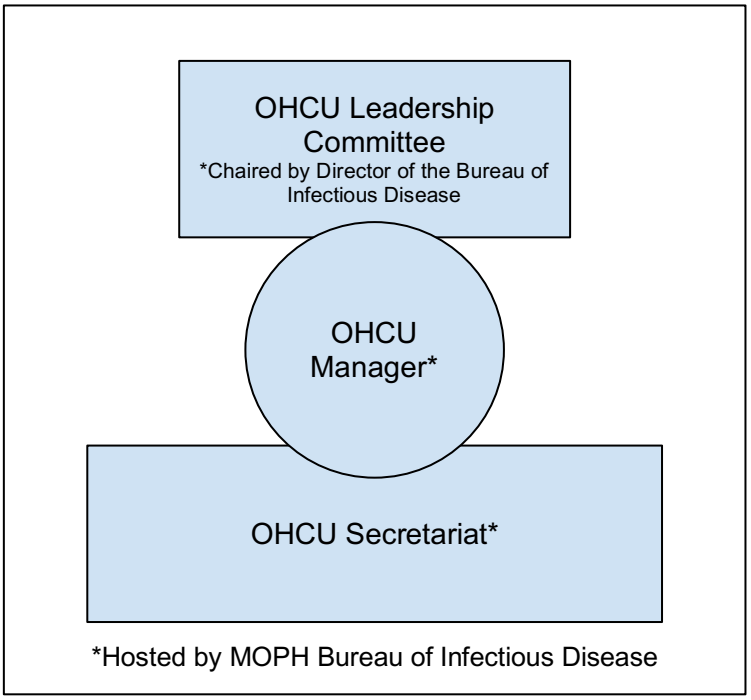
This more formal approach between ministries led to internal discussions between the MOPH's Bureau of Epidemiology and the MOA's DLD. Departments began to work on a collaborative framework which started by developing a diagram of how the ministries currently worked, noting where positions were located, what they did, and how they currently collaborated. This created a basis for discussing how programs could be better integrated, accounting for coordinated actions and communication efforts. This initial mapping between ministries brought up the need for 'coordination' specifically and led to the proposal for a 'unit' or a 'platform.' In time, everyone agreed that the term *unit* was more appropriate because each ministry and their departments could be considered the owners. This discussion was largely led and fostered by the Director of the Bureau of Epidemiology at MOPH and as a result, the unit was coordinated in the Bureau for the first year. In the second year, the unit was moved to the Bureau of Emerging Infectious Disease, also in MOPH, because they were more involved in the preparedness for zoonoses. It was from these collaborative starting conditions that the OHCU was born.

Both the initial AI working group in Thailand and the epidemiology seminar influenced the development of the OHCU. These collaborative activities or initiatives were heavily influenced and supported by international donor funding, partnership and technical expertise. For example, both the US Centers for Disease Control in Thailand

(TUC) and the USAID Regional Development Mission for Asia (RDMA), based in Thailand, provided financial and technical resources to foster multisectoral collaborations in Thailand. Project funding through USAID's STOP AI project, and the EPT1 RESPOND project provided funding to the Bureau of Epidemiology within the MOPH, and academic institutions through the development of the Thailand One Health University Network (THOHUN). Activities funded through these projects fostered national and subnational coordination for AI, and also influenced the inclusion of academic partners in the development of the OHCU. These collaborative activities and initial partnerships ultimately led to the development of the first MOU, signed in 2013, which framed the boundaries of collaboration for zoonoses in Thailand. This MOU, the first of its kind in Thailand, became a framework for supporting collaboration at a national and subnational level, providing departments the policy tool to justify the resources (e.g. financial, time, human) to conduct and participate in collaborative activities. The MOU was later used to inform the development of the Provincial One Health Agreement, which mirrored the national MOU. This first MOU was used widely amongst departmental leadership to communicate with high-level ministerial leadership about the importance of One Health collaborations for AI preparedness, both raising awareness for One Health at higher levels, and creating necessary pathways for collaboration.

MCM Organizational & Operational Structures

Figure 1: Organizational Structure of the Thailand One Health Coordinating Unit



Legal and/or Procedural Mandate(s) or Guideline(s) for the MCM

After multisectoral partners in Thailand came together informally in 2009 and 2010, they formed a steering committee with representation from many key ministries, including important international partners like TUC, USAID, WHO, FAO and OIE. However, it wasn't until 2013, that the first MOU was developed, creating a more formal framework for collaboration. In 2013, One Health was highlighted at the Prince Mahidol Award Conference (PMAC) in Thailand, drawing the attention and support of high-level leadership. At the same time, the Bureau of Infectious Disease decided to create an Emerging Infectious Disease National Plan and this was one of the first opportunities to involve the network of multisectoral actors established by the 2013 MOU. It was during the PMAC conference that the MOU was signed, and this meeting was chaired by the

Deputy Prime Minister. The MOU was between the departmental levels of MOA, MOPH, and the Ministry of Natural Resources and Environment (MNRE). Following this first MOU, a legal mandate for the Thailand OHCU was passed as a resolution during the 2014 National Health Assembly in Thailand. This resolution provided the framework whereby the broader existing network of multisectoral actors could be considered a formal MCM in Thailand. This framework contained specific language that linked One Health policies with ministerial work in outbreak response, as well as education and workforce development.

It was at the 2016 PMAC conference when the original MOU was expanded from four departments to include eight partners. The new MOU outlines the parameters of their collaboration for One Health and the opening paragraph states:

> This MOU is entered into on [this 27th Day of January 2016] by and between the representatives from eight (8) participating organizations, namely the Ministry of Agriculture and Cooperatives, the Ministry of Natural Resources and Environment, the Ministry of Social Development and Human Security, the Ministry of Interior, the Ministry of Labor, the Ministry of Education, the Ministry of Public Health, and the Thai Red Cross Society (hereinafter collectively referred to as **"The One Health Collaboration Network")**.
>
> **WHEREAS,** the parties have realized the importance of the establishment of a multi-sectoral collaboration at all levels in the Thai society to achieve the goal of "One Health," which involves interdependence between humans, animals and environments. **WHEREAS,** the purpose of this MOU is to address the threats from emerging infectious diseases (EIDs) and zoonotic diseases, which are

closely intertwined and could potentially have significant socio-economic and environmental impacts.

This MOU expanded on the original MOU by adding a clause that ministries needed to work together on four primary articles:

Article 1. Set up a mechanism for interagency collaboration with the aim to develop, share and exchange knowledge necessary for the identification, verification, and reporting of abnormal events indicative of the emergence of emerging infectious diseases and zoonoses, as well as other abnormalities which could potentially pose a serious health threat to humans, animals, and environments.

Article 2. Enhance capacity of integrated approach to program implementation at policy and operational levels so as to promote effective and timely prevention, response, and control efforts in dealing with emerging infectious diseases and zoonotic diseases, taking into account potentially detrimental effects these efforts might have on wildlife and environment conservation efforts.

Article 3. Support the development of a new cadre of personnel and the implementation of capacity building program to facilitate and advance the implementation of One Health Concept.

Article 4. Foster and publicize knowledge and information to raise awareness among members of the public and communities about One Health Concept.

This expanded MOU has been considered by many to be the binding framework that has driven the OHCU from primarily an advocacy and communication unit, to what is now

considered a functional and contributing unit for technical coordination in Thailand. It was signed by the permanent secretary of all eight designated organizations.

In addition to the structural umbrella provided by the expanded MOU and the 2014 resolution, the OHCU is also supported in technical function and mandate through additional frameworks and policies. The 2016 MOU states:

> **WHEREAS,** this collaborative effort will be implemented in accordance with the National Strategic Framework for Preparedness and Response to Emerging Infectious Diseases, the Communicable Diseases Act B.E. 2558 [2015], relevant legislations, and the resolution of the 6th National Health Assembly.

This flexibly drafted clause in the MOU set the initial boundaries of collaboration for the OHCU, while also providing the necessary policy frame for formal recognition within the government of Thailand.

A Lessons in Flexible Structures

Many interviewees in Thailand, when describing the policies that supported MCM development, discussed the flexibility of the MOU as being extremely supportive for the collaborative environment. One interviewee from a donor organization described the boundaries of the MOU as being broad, and not too prescriptive. They explain how this supports a sense of inclusivity and the ability to collaborate around almost any activity:

> The MOU is actually quite broad and it's not really, you know, like a go to in detail like a specific role and responsibility, but it's more general on how they should work together to achieve the goal… That's why we do not want to put it in detail. We would like to, you know, any activity can be fit with the agreement

> under the MOU. If you are so strict, very detailed, then there is no flexibility [Th7].

This emphasis on flexibility was repeated consistently in the Thailand interviews. In fact, many reported that the fluidity of the MOU actually set the tone for the development of additional supportive policies at both the national and subnational level. This was reflected in the 2014 Resolution at the National Assembly, and the 2013 MOU served as a mirror for the development of a similar policy at the subnational level.

Another interview described how the MOU from 2013 was adapted in 2016 to be more inclusive, and how this actually informed the development of policies for the subnational levels creating a consistency in language and approach to collaboration. In general, the expansion of the MOU was considered to be extremely valuable and supportive of collaboration in Thailand. However, because the MOU was more inclusive, it required additional high-level advocacy with newly included organizations. This was reported as one of the main challenges encountered by the OHCU. Although members of the original 2013 MOU were supportive of the inclusion of new organizations, it required significant time and energy to help newly included ministries understand the importance of health security and their role to support the OHCU. When asked about this challenge, one interviewee described the collaborative inertia that arose from the inclusion of new organizations:

> For health security and I think it's quite challenging because even though it [MOU] was signed, but then the new ministry, like the Ministry of Education, Ministry of Social Welfare, I think they know how they go to ignore emerging infectious disease, what their role and responsibility is to support health security.

> So it takes time to make them understand. And it's not necessarily that we work only for infectious diseases but in general for health programs or you know, even like just leisurely if you remember the guy that was rescued from the cave… I think really promotes the One Health approach and help people become more understanding. And another good point about the MOU, about the One Health in Thailand. But I think is, is really very useful because when the first MOU started with THOHUN, I think THOHUN was already working at Thailand Mahidol University networks. So the networks really understand the One Health. But when the MOU signed at the ministry level, then you have to educate them a lot. And so like the coordinator, she had been working with the Ministry of Education but there is still a gap and challenging to understand the whole picture and they're ordinary responsibility [Th 7].

This interviewee described the additional time and resources that new members required. New ministries who didn't clearly understand One Health created an element of collaborative inertia. It also required time and energy from some of the critical connectors who were advocating for the MCM and for One Health in Thailand.

Culture of Governance & Existing One Health Policies

The continued emergence and reemergence of infectious disease threats has led to high-level interest and support of policy makers. In the past two decades, Thailand has faced major zoonotic threats such as influenza (H5N1 2004, 2007, 2012; H1N1, 2009), SARs (2003), MERs-CoV (2012) and the potential of Ebola entering the country across borders (2014-present). The repetitive nature and the frequency with which these threats have arrived in Southeast Asian countries have kept the discussion of health security at the

forefront of policy making. Thailand, because of its central location in the region and the level of national progress and development, has remained a focal point for international investments and has hosted many collaborative and multilateral summits. This ongoing engagement has provided important support for multisectoral coordination and One Health at a national level. In fact, when the second case of MERs-CoV appeared in Thailand in 2012, the issue went to the national committee and eventually to the Prime Minister's office, not only allowing, but requiring significant OHCU involvement. The OHCU was then tasked with the development of the Emerging Infectious Disease National Plan. Eventually, this effort parlayed into a national committee that was chaired by the Deputy Prime Minister. This successful first engagement of the OHCU created necessary visibility and high-level leadership support for the role of the OHCU.

Finally, as reported in the OH-APP assessment, the government was involved in a number of national efforts that supported One Health engagement in the country. This included, but was not limited to the creation of a One Health Communication Strategy, a Five-year Plan and One Health Strategy, Terms of Reference (TORs) for One Health coordination or collaboration, a National Antimicrobial Resistance (AMR) Strategy, Annual Work Plans for OHCU Activities, and TORs for stakeholders. Specific to daily operations, the OHCU has TORs, a membership list and documentation for all funding received. In addition, Thailand has completed the following international assessments: IHR-JEE Internal Self-Assessment, GHSA Country Evaluation, GHSA Roadmap, WHO Joint External Evaluation Report, OIE PVS Pathway report, IHR Monitoring Report, and JEE National Action Plan. Each of these documents touches on some aspect of multisectoral collaborations as they pertain to existing and emerging health threats.

Ultimately, the OHCU and the associated policies are developed to sit within, or align with guidance set out through international policy like the IHR-JEE and the GHSA. These policies provide the framework for situating national goals within the context of international policies.

Funding

After the MCM was formalized in Thailand, the TUC became the primary funder of their collaborative work. The USAID RDMA provided support through multisectoral activities and through aligned project-based funding (e.g. EPT 1 RESPOND, STOP AI, and EPT2 OHW project and P&R project). However, in Thailand, USAID does not fund the core administrative functions of the OHCU. To date, the Thailand government provides funding for office space as designated or donated through the MOPH and host Bureau. The government also provides 'in-kind' support through the participation of salaried employees in OHCU Secretariat, Steering Committee and or quarterly meetings. Thus, the TUC, USAID and MOPH Bureau of Infectious Disease work together to fund the OHCU. In recent years, the OHCU has begun exploring the opportunity to develop the OHCU as a Foundation. This model is similar to the Field Epidemiology Training (FETP) Network Foundation, which is a nonprofit that works closely with government and allows external funding to support the work of the network to train human and animal health epidemiologists using a One Health approach.

Leadership

The OHCU has a 'steering committee,' sometimes interchangeably referred to as a joint committee or a leadership committee. It is comprised of representation from the departmental levels of the original three ministries that signed the MOU in 2013: MOA,

MOPH, and MNRE. They maintain a rotating chairmanship led by departmental leaders. Interviewees frequently commented on how the change in leaders often influences OHCU operations and that the current chair has improved operations and network collaborations. The OHCU Secretariat is similarly designated to rotate host departments within the three ministries on an annual basis. However, MOPH has multiple disciplines represented in the Bureau of Emerging Infectious Disease (epidemiology, medical, public health, veterinary medicine, academic experts, among others) and is inherently One Health so there hasn't been an obvious reason to rotate the Secretariat. In addition, the MOPH is charged with readiness for many of the zoonotic emerging disease problems, and the location was reported by many different interviewees to improve advocacy for One Health across multiple departments. To date, the OHCU has never been hosted outside MOPH Bureau's despite the original plan for a rotating model.

The steering committee members meet regularly (every 3-4 months) and this is organized by the OHCU Technical Manager who runs the Secretariat and reports to the Director of the Bureau of Emerging Infectious Disease–the OHCU host unit at MOPH. The Steering Committee can also be convened ad hoc or on an emergency basis as One Health challenges arise. The steering committee does allow for permanent collaborators and regularly involves the TUC and USAID, as well as intergovernmental organizations WHO, OIE and FAO.

This operating leadership model has been received with mixed opinions. Some feel that the 2016 MOU should dictate who participated in the steering committee. It was suggested in one interview that the committee should be comprised of all eight members who signed the current MOU, not just the original three members:

> The committee or stakeholders are formed three ministries if we can expand more and if they engage more stakeholders under One Health MOU it is going to be better for One Health action in Thailand. If they can bring them together. Right now for MOU we can engage more ministry in terms of action. Some of them are members but are not participating. They are participating in some events but not actively participating in some implementations [Th 7].

Many interviewees suggested that broader engagement would enhance One Health collaboration in Thailand. Although the eight members support the OHCU operationally, it became clear that they were not all adequately represented on the OHCU Steering Committee.

Technical Function

The OHCU was originally developed to be a functional unit that acts to provide coordination and shared implementation of activities. In the three years (2016-2018) following the 2016 MOU, the OHCU worked to develop a five-year plan and contributed to the development of new laws, including a communicable disease control law (2015). Both the MOU and the law have become the binding documents for the OHCU and set out the scope of technical activities.

Technically, the OHCU provides an open call for One Health proposals that are then administered and funded through the committee's decision. The funding–around 200,000 USD–provided annually from TUC, funds the operations of the OHCU Secretariat and technical activities which are funded through an OHCU request for proposals (RFP). In 2018, five One Health proposals were submitted and funded through the OHCU. In addition, with the support of the Technical Manager, the OHCU organizes

policy and program meetings with government and provides technical and policy insight for emerging issues, namely EIDs. For example, a recent outbreak of multidrug resistant tuberculosis caused concern and through coordination by the Technical Manager, the OHCU was aware and could provide funding to develop a One Health guideline to support epidemiologists, physicians and veterinarians for when they are faced with similar events in the future. Given the central position and the physical location of the OHCU, the guideline was drafted and shared quickly with leadership in the department of disease control at MOPH. In another activity, the OHCU Secretariat is working with academic partners to research treatments for roundworms. It was recently determined that Mass Drug Administration as currently used in Thailand is highly ineffective as roundworms have developed resistance. This research team was then able to identify which treatments could be effective and the OHCU was able to communicate this in a policy statement at MOPH. Although the primary funding for this technical work comes from TUC, USAID has provided a much smaller level of funding on an activity by activity basis.

The OHCU also organizes activities in the event of emergencies. The OHCU typically convenes a special meeting and will invite relevant partners and technical experts who can provide insight. As a result of these meetings and in the face of appropriate evidence, the OHCU will allow for and then convene the appropriate participation on multisectoral teams. One interviewee noted that before the OHCU was around, this type of coordination would have needed to wait for the national committee, and would have needed to be proposed on a formal agenda and would have taken a lot

more time. As a result of the OHCU, there is a direct avenue for technical and policy coordination across ministries.

Secretariat

The OHCU Secretariat is hosted by the MOPH. The OHCU was initially hosted by the Bureau of Emerging Infectious Diseases, but after recent reorganizations, the Secretariat is now held in the Department of Disease Control, Bureau General Communicable Diseases. This transfer in location has brought on new leadership which has been reported by interviewees as being favorable. The new Bureau has been said to allow a more flexible operating environment. As a result, the OHCU is more effective in multisectoral collaborations and has actually attracted the attention of additional donors seeking to fund One Health activities in Thailand.

Even with my own applied working experience, it was sometimes challenging to discern how the OHCU Steering Committee works with the more operational Secretariat. As a result, I provided multiple times for the interviewees to clarify this. One interviewee from a donor organization described it well:

> *This is just something I've been a little confused about. Do you know, is the OHCU, is that basically the committee or is it more partners? Are the committee and the OHCU Secretariat two separate things?*
>
> They are two separate things. So they are independent but then because it's One Health they, they need a committee so that any decisions that are made, you know are well consulted and all the partners are informed. So the committee comprises of representatives from all the [OHCU] members, like the seven ministries that

signed the MOU together and also the Thai Red Cross and also multilateral or international organizations.

I see. So that the committee is like the kind of governance decision making body for the OHCU?

Right, right. Okay. And also the OHCU is like the coordinating body, so it is the Secretariat.

I see. So the Secretariat sort of, um, implements the activities but the committee makes the decisions for the OHCU?

Right, right, right [Th 4].

Management

The OHCU Steering Committee and the Secretariat are supported by a Technical Manager whose position is funded through TUC. This international funding allows the Manager to maintain a different level of flexibility than if the position had been established within the government. However, the OHCU Manager reports to the Director of the Bureau of General Communicable Diseases, seated within the current host unit at MOPH for the OHCU Secretariat. Because the OHCU has recently been moved to a new bureau there was concern that the Director may not fully understand One Health, however, the current director is actually the Principal Investigator for the One Health provincial project and has been very supportive of the OHCU and the current Manager's approach to OHCU coordination. The manger plays the primary coordination role amongst OHCU partners and is responsible for all communications. In addition, the Manager prepares the technical proposals for the steering committee to review and act upon during regular meetings.

Although the Technical Manager clearly plays a critical role in the operation of the OHCU, the position has historically been difficult to keep filled in Thailand. This is because the Manager position is created through donor funding and is external from the MOPH. Because it is not a permanent government position, there is always uncertainty about donor funding cycles. As a result, the previous managers have left to take permanent government positions when they become available. Initially this was perceived as negative, however, in time, many interviewees have come to appreciate that as managers took permanent government positions, they actually extended the reach of the OHCU, creating new inter-organizational pathways for collaboration. Of added benefit, the current OHCU Manager is consistently reported in interviews to be exceptionally well liked and has remained consistent for over two years now. The Manager continues to fill a strategic role in coordinating and proposing collaborative activities. As discussed further in Chapter 8, this consistent coordination on the part of the Manager has led to increasing trust of OHCU stakeholders and additional support for the OHCU being seen as the One Health convener for the country. It has been reported that this has brought the attention of additional donor organizations outside of USAID and TUC.

Future of the Thailand MCM/ Current Challenges

The OHCU continues to be funded namely through the TCU with technical activity support from USAID. However, additional donors have begun inquiring if they can support One Health activities or services conducted by the OHCU. In addition, the OHCU has also been reported as a resource for the MOPH. When asked about why additional donors are coming forward, one of the OHCU's international partners talked of

the importance of time. In their opinion, donor support has allowed the OHCU the necessary time to conduct meaningful activities and to reach more people within and beyond the OHCU network. They also commented on the flexibility allowed as a result of the current host unit at MOPH:

> I think probably it may be just time, you know, four or five years already that they are here and then the activities reach more like a wider audience and I think it's probably just the timeframe, you know, like five years that they need to reach more people for people to get to know more, for them to gain more recognition. And also I think um, after moving the bureau, uh, it's a lot more flexible and you can get things done quicker and more effectively [Th 4].

As a result of time to build trusting relationships, and the flexibility allowed by the new host unit for the Secretariat, the OHCU continues to see more applications for their call for proposals. This level of engagement has also attracted additional stakeholders, broadening the reach of the OHCU and the likelihood that the unit will garner additional support to continue their activities as TUC and USAID reduce funding levels toward MCM sustainability. One Interviewee talked of how additional collaborators and applicants to the RFP are an indicator of success:

> I think for now if we think of an MCM in Thailand, people think of the OHCU, which I mean I think it's pretty well functioning, pretty well organized now even though they don't have a lot of staff but they are effective and you can see from the number of projects applying for funding. So from last year it was pretty limited to the government agencies, but this year it went out and people from

> universities applied too and I think they got a list of 20 projects or something which was a lot and they were able to fund only five [Th 4].

However, the OHCU will continue to face challenges as donors push for network sustainability. From the start of the OHCU development, the network has been structured around donor funding and influence. Without donor funding, the OHCU will need to redefine how the MCM is hosted within government, and how the change in funding model and location of positions will impact the ability for the OHCU to continue and to bring in the necessary funding to support the continued engagement of all OHCU member organizations.

Chapter 6: Vietnam One Health Partnership

Background of the Vietnam MCM

Similar to the Thailand OHCU, the history of the Vietnam OHP begins with the same pandemic potential H5N1 AI outbreaks in Asia in 2003. The virus, first detected in Vietnam in 2004, spread quickly becoming a country-wide outbreak and creating a sense of crisis and panic in the country and in truth, around the globe. Vietnam, differing from Thailand, was widely considered among international partners and multilateral organizations to be a potential "ground zero" for a global pandemic. In response to this, the government of Vietnam was hosting daily briefings with the Prime Minister and was heavily engaged with international donors and collaborators.

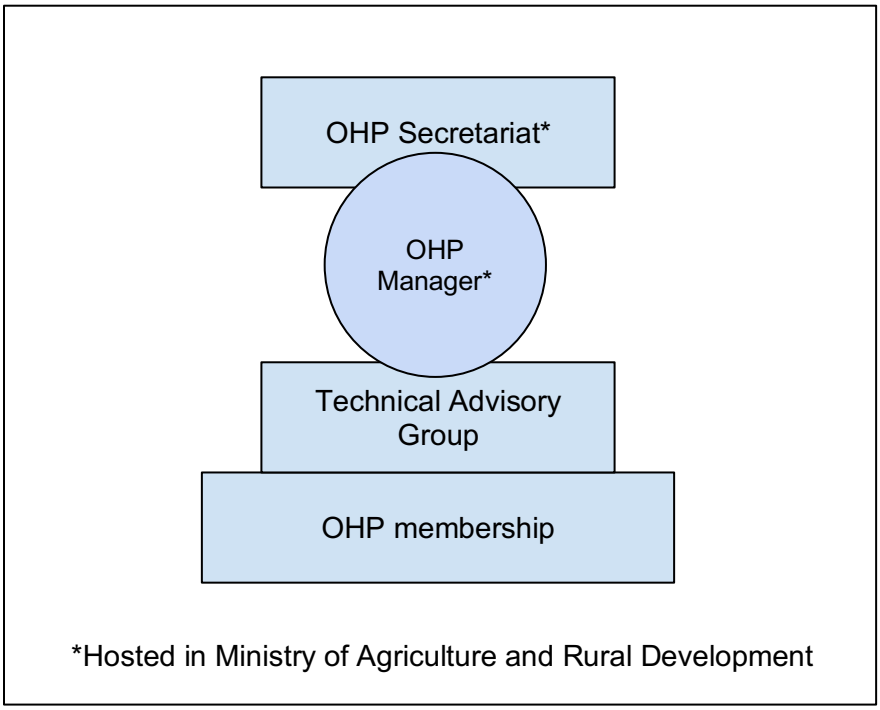
It was in 2006, at a global pledging conference in Beijing, that the collaborative partnership between human and animal health ministries became more formal in Vietnam. At the conference, Vietnam presented a jointly developed national plan for AI, one of the first collaborative policies to be developed. The Vietnam Partnership on Avian and Human Influenza (PAHI) was established shortly thereafter by the government of Vietnam. PAHI supported collaboration between national and international partners, namely the United Nations (UN) and the World Bank, to facilitate the implementation of Vietnam's integrated national response to AI.

The emergence of AI and the founding of PAHI also corresponded with a period where the UN in Vietnam was strongly advocating for reform. In fact, Vietnam volunteered to be one of eight selected pilot countries to deliver the One Initiative for global UN reform at the country level. As a result, when H5N1 emerged in Vietnam, the country was already the focal point of strong international commitment. It was the UN

resident coordinator in Vietnam who proposed a UN joint program with four agencies: WHO and FAO provided capacity support, United Nations Children's Fund (UNICEF) addressed communications and United Nations Development Programme (UNDP) supported coordination. This level of international involvement and interest supported the development of partnerships that fed into the formation of the OHP which was informally approved by the Prime Minister in March 2016. The involvement of UNDP supported a focus on climate and environment, creating a neutral platform that could engage beyond the traditional animal and human health sectors of the PAHI partnership, expanding the disease focus beyond avian and human influenzas.

MCM Organizational & Operational Structures

Figure 2: Organizational Structure of the Vietnam One Health Partnership



Legal and/or Procedural Mandate(s) or Guideline(s) for the MCM

Although the OHP is not supported by a formal MOU, there is high level political engagement and authorization from the Prime Minister to support OHP Functions. The Ministry of Agriculture and Rural Development (MARD) worked with the Ministry of Health (MOH) to prepare the OHP Framework. This report explained why the PAHI should be expanded to include additional partners that will support collaborations around broader One Health issues. The proposal for a OHP Framework was then submitted to the Prime Minister, who then informally authorized MARD to establish the OHP. A signing meeting was convened among all relevant partners of what is now known as the OHP. One interviewee described the unique circumstances and culture of governance in Vietnam that gave rise to this informal support for the OHP:

> MARD with the clear support of MOH submitted [the proposal] to the prime minister's office for clearance to establish this partnership. And if I recall correctly, the prime minister scribbled in the margins of that report. Yes, MARD, please go ahead. And, and that initialed it. So it didn't rise to the status of a formal communication from the prime minister. The prime minister's office scanned that document and send it back to MARD. And then he went ahead and assign with the vice minister went ahead and, and we convened the signing meeting [Vn 9].

It was this informal engagement that support the development of the OHP. The OHP Partnership Agreement was signed by three primary lead organizations, MARD, MOH, and the Vietnam Ministry of Natural Resources and Environment (MONRE), who are then supported by in total by 27 national and international members. The OHP Framework outlined a steering committee which designates MARD as the chair, with the

MOH and MARD serving as vice-chairs. The language in the proposal does not extend to include any roles, responsibilities or tasks for the Chair. Unlike in Thailand, the steering committee does not include any international partners as this is not customary in Vietnam.

Although the OHP is not supported by a formally recognized MOU, the OHP Steering Committee currently operates as the decision-making body and unofficially uses the Joint Circular 16, a policy framework created between MOH and MARD, to guide decision making. In Vietnam, it is common to develop joint circulars rather than MOUs. These circulars outline how organizations will coordinate technical work to achieve certain endpoints. Although developed outside the OHP proposal, the Vietnam Circular 16 is one of the main policy documents that set the boundaries of OHP collaboration. However, the Joint Circular has created challenges for OHP activities because it is more technically rigid, or prescriptive, and has actually prevented informal collaboration at multiple levels of the network. One interviewee from the MOH shared some of the challenges that the Vietnam Circular 16 has encountered in implementation:

> Ultimately, the Vietnam Circular 16 is more rigid than an MOU and dictates how two agencies work together. Before the circular it was a more informal engagement but could happen at lower levels. Then the circular was jointly drafted and this was signed by the prime minister. The partnership is based on the circular which was developed 6 years ago. Once the circular was initiated the agencies need to work by it but they started finding problems but now, because it was signed, it can't change [Vn 10].

This sentiment was repeated in many interviews. It became clear that the Joint Circular, although developed collaboratively, may have been too detailed, creating unintended rigidity for collaborative efforts. Although people have expressed their concern, one interviewee described that because it was mandated by government, there was little they could do:

> Yeah but unfortunately the government issued the joint circular so we keep it. After the circular comes into effect we found a lot of problems under the circular but we don't have a chance to revise, because if we revise, that means the collaboration would stop. So we develop the guidelines under the circular. So I think the MCM here is one effective tool to have during the development of this guideline. I have some version of that guideline and we plan to finalize that next month [Vn 10].

The circular created challenges and as a result, some MCM members are trying to create guidelines that could fit under the circular and allow for more flexible collaboration. The MCM is considered to play an important role in drafting this guideline. So although the circular was not created for the OHP specifically, it resulted in enough negative feedback that the prime minister, when asked to endorse or approve the OHP at a higher level as a formal government mechanism in Vietnam, refused. One interviewee from the MOH described this succinctly:

> There was a plan to form a high-level joint coordinating body where the prime minister would lead with technical support from MARD and MOH, but this has been halted so [current] OHP is the only organizing body [Vn 10].

The Circular 16 thus provides guidance on technical coordination with no indication of leadership or communication roles and responsibilities. This has created problems as Vietnam is very hierarchical in operation.

Vietnam also has a One Health Strategic Plan (OHSP) for Vietnam (2016-2020) and the OHP Secretariat actually supported the development of this guidance document. This strategic framework was signed by multiple members of the OHP and by additional international partners. In response to this, two sectoral OHSP implementation plans have been finalized in June 2018 and are waiting for approval. These will ultimately support ongoing efforts of the OHP as they work toward more sustainable government-supported mechanisms.

Culture of Governance & Existing One Health Policies

Vietnam was at the center of global rhetoric on health security and pandemic-potential zoonotic disease. There exists a culture of command and control for the national government which reflects a sense of standard operation through sectors in peace time with a transition to multisectoral work during crisis. Many members of the OHP Steering Committee reflected on this in their OH-APP assessment:

> During peacetime, members communicate with each other based on their individual mandates using normal government channels, rather than through a specific steering committee communication mechanism. During peacetime, there is no specific method for internal communication and information exchange among members [Vn OH-APP].

This particular point made me pause as a researcher. Thailand consistently reported the need for collaboration during peacetime. They suggested that peace time collaborations

allowed for building trust within the network. This turns out to be quite the opposite in Vietnam. One interview with a foreign member of the OHP Secretariat commented on this strict operational control used during emergency response in Vietnam:

> Yeah, I mean Vietnam is good in a crisis. They have very good mechanisms. When Vietnam was facing H5N1 outbreak throughout the whole country, when it was sort of 60% of the country was affected, the prime minister was leading daily meetings at 4:00 with the whole cabinet of all the ministers coming together to report and what they were doing, get their orders, go out and share information and go out and take action the next day. So people often raise the concern, if you're not good in peacetime, you'll fall apart in wartime. But that's actually not what we've observed in Vietnam. It was observed that when in the face of a crisis everyone comes together and the decisive sort of chains of command, more of this operate at least for things people understand [Vn 9].

This perspective on collaboration during peacetime versus wartime challenges some of the common assumptions of One Health–that One Health during endemic and ongoing challenges will improve action during zoonotic disease emergencies. However, this hierarchical structure in Vietnam has challenged engagement in recent years that have been considered more 'peaceful.' One interviewee described the OHPs challenges to be formally recognized by the government, recounting how the hierarchy between vice ministers and the prime minister leads to inaction at the national level:

> Every government official you ask in Vietnam, the moment they realize you're talking about an issue that covers two ministries, then the solution is extremely clear to them. No minister can subordinate another minister. Therefore it needs to

> go up to the level that is in charge of both ministries. Now that level is obviously is the prime minister or deputy prime minister. But you can't sit every single little issue up to the prime minister. So if you ask me this, there's two main reasons why the prime minister hasn't issued a decision on the OHP. The first is right now this is not seen as being an important enough issue to mobilize the role of the prime minister. Vietnam, like every country is horrifically complicated and the prime ministers got a lot on his plate as do his deputy prime ministers. So don't just elevate every single issue to us. Um, the second reason is this is not a high enough priority right now. That wasn't the case in 2004 or 2005 as they said, the prime minister was really directly engaged. Fast forward 10 years, the prime minister would pay attention when Ebola is an issue in the world or when MERs-CoV is having an outbreak in South Korea and there's a risk... or when Zika is suddenly in the news, but they're certainly not in a position to be chairing periodic meetings in peacetime. It's a real challenge [Vn 9].

This quote highlights the culture of governance and the level of government involved in health security discussions during ongoing surveillance and program operation, versus outbreak and emergency operations. This is likely why the 2016 OHP was not raised to become a more formal agreement in Vietnam. The policy window was not one of an immediate emergency or crisis.

Funding

The OHP has received significant international donor support, namely through USAID, UNDP, and DTRA. However, current funding for the OHP is set to expire or be significantly reduced in 2019 and 2020. As a result, the OHP is currently pressed to find a

sustainability model beyond donor funding. This is particularly challenging because the OHP has been almost solely supported by an international funders to date. As a result, the coordination of funding must first go through the International Core Operations Department (ICD) which is a coordinating platform for international funding that is set within MARD. This formal requirement provides an unexpected avenue for the distribution of multisectoral funds, alleviating some of the challenges of sector-specific funding through ministerial departments. Although ICD is a platform within MARD, it can distribute funds easily between many ministries and is considered an inter-ministerial platform. The government of Vietnam does provide some support by funding 30% salary for one staff member and providing in-kind financing through the provision of office space and the staff time for meeting contribution from member organizations. However, the current funding mechanism through ICD, is entirely dependent on donor funding. If Vietnam were to fund the OHP through government allocations, the funding would need to be appropriated outside the ICD and as a result, would completely reshape the mechanism used for distributing funds between member organizations and the OHP Secretariat.

Leadership

The MARD is the lead for the OHP, and the leadership model is outlined in the OHP Framework as follows:

> The chairing arrangements will be the same as those applied for PAHI, with the Minister MARD as Chair of the Partnership, and a Vice-Minister of MOH and the MARD as Vice Chairs.

In Vietnam, it is customary and culturally appropriate to only change leadership models if performance is considered unsatisfactory by other parties. Therefore, as currently stands, there is no intention of the OHP to support a rotating leadership model for the chair of the OHP Steering Committee. However, it was noted in many interviews, that the MOH has more resources and capacity so MOA communicates with the Chair regularly. Shared decision making is supported at the level of the Secretariat where each of the three primary ministries (MARD, MOH and MNRE) submit a nomination letter to designate a focal point (one person/ one ministry) usually through a department of the ministry.

Technical Function

The overall goal of the OHP is to enhance the capacity of Vietnam to address zoonotic infectious diseases threats at the human-animal-ecosystem interface. The OHP consists of a Secretariat and Steering Committee that are supported by participation from 27 partners representing multiple disciplines from private sector, academia and international partners. Differing from Thailand, the OHP does not have a mandated technical function and rather serves as a coordinating platform for partnerships. Given Vietnam's central role as a UN reform country, this is not surprising. Because so many international partners were involved in the original discussions of AI response and the formation of PAHI, this influenced how the OHP developed. Original international partners included UNICEF, UNDP, Australian and Japanese government funding, USAID, DTRA, World Bank, Red Cross, and likely many other smaller organizations. Given the complexity of managing these relationships and the funding they brought into Vietnam, it is not surprising that the OHP was originally discussed as an interface for overall coordination between the Vietnam government and international partners. The OHP was designed as the

coordinator or convener of international partnerships rather than the coordinator of surveillance or other technical work that happens within the purview of individual ministries or across their technical departments. For example, although national steering committees on antimicrobial resistance or zoonosis exist, the OHP doesn't play a specific role in this ongoing technical engagement. The OHP has however done some studies, funded through USAID, on how coordination is happening at the different levels of government, national and subnational, and has supported some recommendations on how that can be strengthened. The OHP really exists to support international coordination and cooperation in Vietnam and this differs from many other MCMs.

In recent years and with evolving funding cycles the OHP has begun to discuss and collaborate broadly around One Health issues such as antimicrobial resistance and illegal wildlife trafficking. This shift in policy window has allowed for the inclusion of environment and wildlife sectors more readily in discussions of the OHP. Although the OHP began collaborations around emergencies, they have gradually moved to more regularly scheduled meetings (usually quarterly) which are organized and supported by the OHP Secretariat. Members come together to discuss business and upcoming activities and ensure proper implementation of the OHSP. Two of the quarterly meetings focus on policy and research and then two meetings are decided upon by a technical advisory group. Along with regular meetings, the OHP Secretariat also supports a website, produces a newsletter and maintains a directory of One Health projects in Vietnam. The OHP also supports many national and regional meetings and in the last few years, hosted two international conferences for the zoonotic diseases action package of GHSA and recently hosted an Association of Southeast Asia Nations (ASEAN) meeting on rabies. In

addition, with donor funding and technical support, primarily through USAID and DTRA, the partnership has organized technical activities. For example, as described briefly above, USAID supported a policy-focused case study of One Health at the provincial level to better understand how provincial engagement could support One Health efforts.

However, despite ongoing collaborative engagement, the lack of technical work has seemed to limit the OHP's options for sustainability. Differing from Thailand, they don't have a mechanism, such as an RFP, to support shared technical engagement and instead function to coordinate discourse and dialogue. This limits the likelihood that other donors will be able to justify funding their work and instead, would be dependent on government funding once current donors reduce or eliminate their funding for the OHP in 2019.

Secretariat

The Secretariat is hosted at MARD and is staffed by four USAID funded positions: A Technical Manager, a knowledge management officer, an accountant and an administrative assistant. In addition, government representation is appointed from all three Ministries: MARD, MOH, and MNRE. However, government participation in the Secretariat is mostly unpaid or very minimally funded. Annual meetings are chaired by the Minister of Agriculture, but usually delegated to a vice minister from each ministry. The Secretariat has hired one foreign national, an Australian consultant, who serves the Secretariat as the Partnership, Advocacy and Coordination Specialist. This individual was hired because of former work with UNDP and their history of involvement in many of the partnerships that led to the development of the OHP.

Management

The Technical Manager for the OHP, similar to the Thailand OHCU, remains a critical position. The current Technical Manager for the OHP is widely regarded as being extremely capable. This position is paid through USAID project funds. The Technical Manager is the Secretariat's lead for day to day business, but the position does report to the designated Secretariat leadership from each appointed ministry. For daily management in the Secretariat office, the OHP Manager reports to the Department of Animal Health's Director General at MARD. This was noted as a high-level position that reports directly to the Vice Minister of Agriculture. Unfortunately the Director General of the department will retire later this year, imposing even greater challenges on the OHP as they look to transition away from donor funding in 2019 and 2020.

The Manager position will face some of the greatest challenges as donor funding is reduced. One interviewee described how government positions are funded at different rates than donor-funded positions and that this may impact the quality of staff in the Secretariat:

> I mean, she's just very capable and they have been fortunate to attract someone who has the happy situation of not having to rely fully on her salary. She's got a certain family background and she enjoys it, so she's the sort of person that's extremely good at working with all levels, including ministers and vice minister and so on. But uh, that's been a bit of a, a, you know, if, if she would leave and they were to replace her, you, you certainly wouldn't predict, um, all of that would, would necessarily come with it. With the replacement [Vn 9].

In truth, the funding for the Secretariat's Manager is extremely limited, and even more so if the position is to be funded as a government salary. In numerous interviews, this was presented as one of the greatest challenges that the OHP will face in sustainability.

Future of the Vietnam MCM/ Current Challenges

The current USAID funding for the OHP expired in July 2019. Unfortunately the OHP has all but ceased operations as of December 2019. The Secretariat remains an empty shell as funding has dried up for key positions. There remain questions around how the government will allocate funding to support the rehire of these positions, and this leads to further questions about who would fill these rolls and how that would influence OHP sustainability over time. Back in July, one interviewee shared their doubts about the government's ability to continue supporting the OHP in the face of reduced donor funding:

> The current discussion of what happens after July… Will we have the… will the government sign sufficient personnel to cover those functions? The answer is mostly no, they won't, I think, but we that remains to be seen in practice but that's gladly outcome based on the experience of other partnerships in Vietnam [Vn 9].

This interviewee accurately predicted the shutdown of the OHP and the lack of government response to take on funding once donor resources were reduced. However, even if the government were to provide funding, it would not be at the same level of donor funding. Previous transfers from international donor funded initiatives to Vietnam government funding have seen a significant decrease in pay for government staff. Government funded positions in Vietnam are extremely low and do not provide even

baseline living expenses. As a result, when international funding transfers to government positions human resources leave.

Aside from questions of where funding will come from, the OHP will also need to navigate new leadership positions. One interviewee described how a turn-over or change in leadership will significantly change the dynamics of the OHP and that this is occurring now, when sustained leadership is critical time:

> We've had turnover in both the relevant vice ministers from agriculture and health in the last six months or so. And, you know, we had very strong relationships with the two vice ministers that were previously in those roles so we now are building those relationships with new people. That's a normal and constant process, you know, in any government. It's tricky with the timing because we had such strong relationships and now we're rebuilding [Vn 9].

This same interview stated this about the departmental level relationships:

> As far as departments, agencies, working level, I think once again, we have excellent relations across the key stakeholders for One Health, particularly for One Health zoonotic diseases. They very happily participate in our meetings, make presentations, share their work, share their reports with us so we can prepare overall monitoring. My colleague, the secretary manager, who was technically just a project staff, was sent by the government earlier this month to an Asian regional meeting on antimicrobial resistance in the Philippines. And she was the only person there representing Vietnam. She was in constant contact with the two ministries about all the issues that were discussed and what they wanted to say in the meeting. Um, so, you know, quite embedded I think in that national

> system, uh, and in some ways taken for granted that we exist, that we support the team is there and willing to help and yet they are basically project funded [Vn 9].

It becomes evident that the OHP continues to face significant transitional and capacity-based challenges as international donor funding fades to the background.

Finally, one of the larger issues for sustainability will revolve around how Vietnam continues to handle the ascent from low-income to middle-income country. The government is adapting in real time to have the complexity of a more globally integrated economy. One interviewee remarked:

> It's a real challenge to develop another effective approach where there are still real accountability, and the government struggles with that here. And I think it's also a little bit and aspect of moving from low income to middle income. Then our low- and middle-income country. Um, the kinds of challenges you're dealing with as your systems and new economy develops and you get more integrated into the world and they're complex challenges. Um, and you need to come up with new and more complex arrangements [Vn 9].

This challenge plays out in Vietnam as competing demands challenge the time, resource and investment of high-level engagement. As the OHP approaches national ownership without any formal government mandate, some have questioned whether the OHP should even attempt to continue:

> But yeah, it is quite a considerable challenge. And you know, we had a very interesting discussion yesterday afternoon with USAID and UNDP on this and we are writing briefing notes for the government on what they might consider forward organizing meetings and other processes here, including raising the

> scenario of whether, well should we be shutting this down? as a way to gauge… have people seen value in, in sustaining it? We would rather declare victory and depart the field then let it die a slow, slow death of neglect. But what we think, you know, as you asked me my own view … some of these issues really requires such a difficult decisions that they can only happen in the face of a considerable threat [Vn 8].

The OHP remains in operation very informally, however, there has yet to be any indication that the government will come through to fund the OHP. Even if the funding was provided, the diminished salaries, the changing leadership and the necessary structural changes would be nearly insurmountable. In addition, unlike Thailand, the OHP does not have a technical function. They don't have a service output or outcome to offer additional donors. Finally, the culture of governance is one of command and control, and they are facing emerging challenges as they move from low to middle income. It may take another crisis in order to see the OHP reestablished and functional, whether that is through donor or national government support.

Chapter 7: Interdependent starting conditions create paradoxical tensions for MCM structures

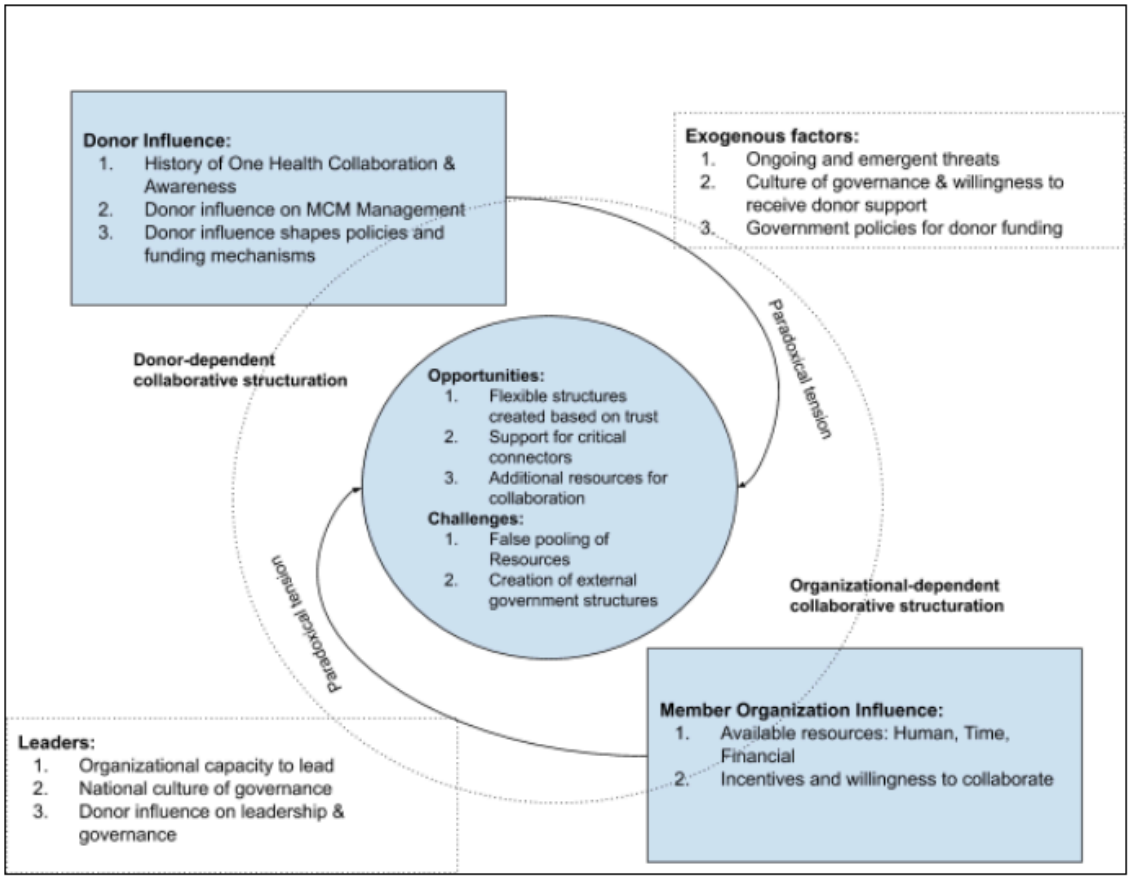
For both the OHCU and the OHP, the structuration–the interactions between structures and individual agency that allows for the possibility of structural change over time–was influenced heavily by two primary factors: donor influence and member organizational capacity to participate. These factors, acting as the endogenous starting conditions of MCM development, provided the necessary tension within the system for structuration to occur. **Figure 3** constructs how donor influences and member organizational capacity, when viewed as interdependent poles, allows for structuration in the process of MCM development. As MCM leaders navigate and manage these paradoxical tensions, it creates both opportunities and challenges for MCM structuration, ultimately challenging the sustainability of MCMs within national government systems. Exogenous systems factor, such as emerging disease, existing cultures, and systems of governance, were beyond the control of leaders and further supported or constrained the structuration of MCMs. The intentional or passive decisions that MCM leaders made early in the process of MCM development played out to critically influence structures and the eventual viability of MCMs beyond donor funding.

Although the health security policy window remains wide open with GHSA 2024, the fact remains that donors are becoming exhausted after nearly two decades of funding collaborative platforms. Donors need to be able to show results and as such there has been a recent shift in focus and a rising pressure to see MCMs sustained within their own government systems. In this new funding environment, MCMs are facing near

insurmountable challenges toward becoming sustainable entities within national governments. It is the reinforced structural rigidity observed in MCM development that probes into a theoretical divide within the cross-boundary literature. Are structures created at the start of collaboration adaptable later on in collaborative processes? Although Takahashi and Smutny (2002) point to a lack of adaptability that was similarly seen in this research, Bryson et al., (2015) highlight a number of scholars who assert that while collaborative governance structures pose important constraints on further development, these structures are often quite adaptive and changeable during collaborative processes (Cornforth, Hayes, and Vangen 2014; Kenis and Provan 2008; Stone, Crosby, and Bryson 2013). This divergence in the literature highlights the importance of this research, and the inherent value in the exploration of MCMs as a case of collaborative structuration over time.

This chapter examines these endogenous systems tensions, arguing that starting conditions, when truly interdependent, create barriers to sustainable structures when one pole is reduced or removed from the system. This work further outlines the notable role that MCM leaders play in the management of this paradox toward structural adaptation and MCM sustainability. In the case of Thailand, we have seen these tensions play out as adapted structures with potential avenues for sustainability, while in Vietnam, we have seen interdependent starting conditions reinforced over time, ultimately inhibiting the development of sustainable government-supported structures.

Figure 3: Influences on MCM Structuration and resulting challenges and opportunities for the creation of sustainable MCMs within national government systems



Donor Influence and MCM Member Organizational Capacity – Interdependent Poles and Paradoxical Tensions for MCM Structuration

Donor influenced structures created at the start of collaboration were almost entirely positive, providing immense opportunity to support MCM member organizational engagement in the development of the OHCU and the OHP. In the case of developing economies, this inter-ministerial engagement between member organizations would not have been possible without donor support which creates the interdependence and the resulting tensions between these two endogenous factors. Donor funding fueled collaborative efforts and raised One Health awareness among key stakeholders. This

sustained funding and engagement garnered high level political will in both Thailand and Vietnam. However, the donor's early influence, and the subsequent 'flood' of GHSA funding created a false pooling of MCM member organizational resources. Many ministries agreed to participate without fully understanding their own interests, motivations or existing resources. As these paradoxical tensions–donor support and organizational willingness to participate–played out, MCM structures were created and then reinforced outside of traditional government ministerial structures. Although external structures worked well in the beginning of MCM collaborations–providing a quick start for necessary leadership and operational structures, these external structures were reinforced during the process of MCM development leading to donor dependence. As collaboration continued and evolved, these early structures became more rigid leading to the emergent and rather urgent questions of MCM sustainability beyond donor funding.

Donor Influence as a paradoxical tension.

The rise of GHSA provided immense funding and support for the development of MCMs. Willing countries, as was the case for Thailand and Vietnam, were inundated with resources and ongoing engagement that fueled collaborative action. Donor interest and influence came from both intergovernmental organizations like WHO, OIE, FAO, ASEAN and World Bank, and from international donors from Europe, North America and Australia. This ongoing engagement ultimately influenced foundational starting conditions for MCM development. This included donor influences on: (1) the history of collaboration, One Health awareness and political will that gave rise to MCMs, (2) the early structuring and selection of MCM management, and (3) the government

mechanisms used to support MCM development. Let's take a closer look at these three donor-influenced starting conditions that gave rise to MCM structures.

A History of One Health Collaboration that Garnered Political Will

International donors supported a strong history of collaboration for partners in the Southeast Asia region, while in parallel, fueling One Health awareness and garnering the political will of leaders in both countries. This initial GHSA-supported donor engagement has been continually reinforced as a result of exogenous systems factors such as emerging and re-emerging disease threats, existing cultural approaches to governance and disease management, and existing governance structures like the ICD in Vietnam, among other external influences. We'll look first at some of these exogenous factors and how that has supported positive donor influences on the history of collaboration, One Health awareness and political will that were important to early structuring of MCMs.

First, recurrent and progressive disease emergence over the past decades created an emergent 'policy window' that fostered ongoing support for donor-funded One Health activities. Both Vietnam and Thailand have remained 'hot zones' for continuous emergence of zoonotic diseases that required immediate and inherently multisectoral, One Health responses. This coupled with the rise of GHSA has fueled a sense of collective action for global health security. Donors moved away from the historic colonial international development approach to one of shared leadership and decision making. As a result, MCMs became a normative solution to the complex threats of emerging infectious disease, and donors sought to work with national governments as strategic partners intent on preventing transboundary diseases. One interviewee from an international donor agency stated that Vietnam's MCM has matured as a result of a

supportive external environment for collaboration and a long history of working across sectors for emerging infectious diseases:

> Well, I mean, I think the biggest influence that has helped with the maturity of their mechanism is the environment in which they live. I mean they have had more experiences of these outbreaks than any other region. Maybe West Africa, I don't know, but I think that history really does speak to their knowledge base and how much they prioritize this level of coordination and I think AI catalyzed this political momentum [Vn 8].

This exogenous systems factor–emerging and re-emerging disease–allowed for donor funding to be willingly used to support MCM member organizational participation. In addition, many member organizations, as a result of managing these outbreaks, had experience and knowledge with which to contribute. In both Vietnam and Thailand, this shared understanding of health security and their partnership with donors allowed for a willingness to receive donor support. One international donor stated that this collaborative willingness on the part of Vietnam led to multiple funding opportunities:

> Vietnam has been one of the countries that really showed willingness on these issues over a long period of time. And so a lot of stuff has been piloted here. You know, the first OIE Performance of Veterinary Services (PVS) took place in Vietnam, health security financing assessment of the World Bank took place in Vietnam. Um, but the negative of that is that Vietnam doesn't benefit from other countries [experiences] and they do everything on a pilot basis [Vn 9].

Vietnam has been inundated with opportunities, but as discussed, has also been the first to experience many of the capacity building programs and initiatives that were later revised and strengthened for use in other countries.

It is the ongoing pilot approach to donor engagement that has undoubtedly allowed for robust and sustained high level engagement and partnership across sectors in both Vietnam and Thailand. It became clear that the time spent collaborating, building relationships and creating trust between donors and MCM members was critical. One international donor from Vietnam summarized the importance of collaborative history:

> I think people underestimate how much time it takes to establish these mechanisms and the political will that's required to get them the legs that they need to succeed in the future. They also cost money. You know, coordination is critical, but it's not cheap and you need to have relationships with institutions and individuals in order to make that happen so that you can leverage your relationships, but you have to kind of nurture them over time to come at this with a common vision for shared coordination and collaboration. So I think time, money and political will [Vn 8].

Similarly, Thailand recounted the importance of building an MCM step by step through continuous engagement and multiple opportunities for collaboration. This time spent working together created the foundations, and more likely, the trust, for the development of a strong MCM. One interviewee from Thailand noted the importance of collaboration on the endemic disease, Rabies, which occurred over 10 years before the official formalization of the MCM in 2016:

> If we start with a sensitive topic it is quite hard because people don't want you to share. For example, if we inference an issue, during this time in the peace time we don't want to share, the information that is quite important. Sometimes it's very confidential, they want to share so much but in the outbreak we share a lot. The coordinating unit we started building this trust from the rabies and the influenza outbreak in 2004. In that time we had we were faced with many problems, we tried to solve the problems together. When we had the outbreak everyone comes together and try to solve problems in that time. And everyone is willing to share the info because it is in the critical and no one wants to give the secret anymore [Th 3].

During the OH-SMART workshops and during my interviews, I was consistently impressed with the relationships that have been fostered as a result of these multilevel, multinational partnerships. The time and trust built was evident as each interviewee suggested a number of other participants from other organizations–national and international, reporting that they were knowledgeable and suggesting they will have important perspectives to share for this research.

Differing slightly from Thailand, Vietnam reported success in working during crisis, and less emphasis on the continuous collaborative engagement for endemic diseases. This is in part a result of the culture of governance, an exogenous systems factor, which lends to a more restrictive and hierarchical approach than in Thailand. One international donor painted a stark picture of what it looked like to see collaboration in action, and challenged the notion that peace time work would influence 'wartime' needs in Vietnam:

> Yeah, I mean Vietnam is good in a crisis. They have very good mechanisms. When Vietnam was facing H5N1 outbreak throughout the whole country, when it was sort of 60% of the country was affected, the prime minister was leading daily meetings at 4:00 PM of the whole cabinet of all the ministers coming together to report and what they were doing, get their orders, go out and share information and go out and take action the next day. So people often raise the concern: if you're not good in peacetime, you'll fall apart in wartime. But that's actually not what we've observed in Vietnam. It was observed that when in the face of a crisis everyone comes together and the decisive sort of chains of command, more of this operate at least for things people understand. It's incredibly difficult to get people to imagine the kind of absenteeism they might get, for example, under a real pandemic and the impact that might have on, you know, just keeping the lights on and, essential services going in not having all your HIV patients die because they could not be addressed because the supply chain fell apart. But as far as the specific responses, you know, to a crisis, Vietnam in observation has been pretty good [Vn 9].

In both Vietnam and Thailand, whether a preference for One Health collaboration is a result of peace or war, time is necessary to support technical planning and preparedness. This ultimately influences the development of MCMs and the way donor influence creates tensions that truly support member organizational participation and engagement.

As a result of this strong history of collaboration and the donor funding made readily available for One Health activities, the term and the concept of One Health became well known at many levels of government. One interviewee in Thailand went as

far as to say that One Health doesn't need to be explained anymore, it is part of the lexicon in Thailand:

> So I think that the, the willingness of people to work together and the policies support and you need the one health MOU and you have to specify role and responsibility for each organization so that they understand and there is more and more is the willingness. And I think right now it is not necessary to explain what One Health means. I think that most of the country or all of the country knows what One Health means [Th 7].

This was similarly seen in both Thailand and Vietnam, where nearly two decades of donor engagement has allowed One Health to become a standard term at technical levels of government. Further to this, donor organizations also had the ability to access high levels of government in Vietnam and Thailand, ultimately advocating for their programs and the use of One Health as a tool for global health security beyond technical program management. One interviewee in Vietnam described the level of diplomacy that was accessed for the One Health partnership framework:

> The partnership framework was signed by the 27 partners. So the Vice Minister of Agriculture was sort of authorized by the minister. And likewise for health. I can't remember who signed for Ministry of Natural Resources and environment, but it might've been at that level. Then the US ambassador was fine for the US agencies, the UN resident coordinator, perhaps the three… our other partners, you know, was signed by whoever was their authorized representative [Vn 9].

This international donor funding has supported both OHCU and OHP to conduct joint meetings and activities that have supported One Health awareness at both a technical level and at higher leadership and policy making levels.

This history of funding and donor influence has played an integral role, changing the landscape of discussions, and ultimately the awareness and shared understanding of One Health. In fact donor funding for MCMs also leveraged funding and activities from other USAID funded programs:

> The [USAID] RESPOND project provided the funding to the Bureau of Epidemiology on the provincial One Health Project. So that's why, you know, in order to get the support because for Thailand we are seeing that there when you working group is already established even is very informal, but it becomes more formal and more interactive because of the H5N1 outbreak in 2003 so we start to work together and you know, they learn a lot more about One Health [Th 7].

In addition, this interviewee also noted that awareness, as a result of donor funding, has influenced One Health discussions at many levels of government. This engagement across many levels provided the starting conditions for the development of the first MOU in Thailand which later supported similar efforts at a subnational level:

> The [donor] funding to work with the bureau of epidemiology to set up the One Health collaborative work at the provincial level because at the central and national level they were supported by the technical working group and most of the people understand the term of One Health but at the provincial level we would like to provide more evidence. So in order to allow people to work together, the one health MOU was generated. So the provincial level can use these documents,

> because actually the provincial government will be like overarching or activity in at the provincial level. The One Health MOU is very helpful because sometimes…. when you need something to show at the policy or political level to allow the people, the staff, the government officials to work together [Th 7].

Donors influenced more than funding, shifting the political rhetoric and using complementary programs to shape ideas and coordinate partners to leverage shared results. It was evident to me during the interviews, that these complementary EPT programs provided a relevant linkage between formerly 'siloed' conversations, such as those happening in government, and those happening in academic institutions. It was interesting to hear government ministry staff suggesting that university programming was important for their work as well as their continuing education. One Health has been integrated across programs, aligning many programs and many institutions.

Finally, in Vietnam, the MARD-supported ICD platform had a similar effect on the awareness of One Health. The ICD maintains high level ministerial connections and because donor funding was required to be distributed through the ICD, this was reported to improve advocacy for OHP and associated multisectoral activities. Specifically, one interviewee from the OHP noted that this connection with the Minister of Agriculture allowed for coordination with high level leadership from OHP member organizations, allowing added support for One Health:

> [The ICD makes] it easy to coordinate between the two departments in the two sectors. So if the money goes directly to the technical department they have money by themselves, difficult to invite Preventive Medicine Department [from MOPH] to the center. Kind of like a neutral unit. The neutral unit is ICD. They

> are very close with the leader of Ministry. Every day they must be a report for the Minister of Agriculture and Rural Development. So that is when they coordinate with the partners. The five ministers send the issues in to the partners [Vn 2].

The ICD, an exogenous systems factor, allowed for donor funding to better support and engage MCM member organizations. The ICD as a donor-dependent starting condition was a unifying platform, allowing multiple institutions to be involved and to benefit from a trusted avenue for funding and program implementation.

In this section, we have unpacked how endogenous and exogenous systems factors influenced MCM structuring at the beginning of collaboration. This confluence of national and international health security interest, donor engagement and funding, paired with national government 'willingness' to accept external support, allowed ministries in both countries to spend time working together and building trust between organizations. It became quickly apparent that this sustained level of multisectoral and multilateral engagement was a primary starting condition for what later became the OHCU and the OHP. In part as a result of such strong donor interest in the region, and nearly two decades of time spent collaborating, both OHCU and OHP benefitted from an increasing One Health awareness and a subsequent political will to see collaboration actualized. This level of advocacy is hard to attain, but the GHSA has created a neutral platform for these discussions.

Donor influence on structures and the selection of MCM management

Donor funding also influenced the quantity and quality of human resources involved in the start-up of MCMs. In both Thailand and Vietnam, government salaries are quite low and most personnel need to maintain multiple jobs to sustain living wages. Donor funding

allowed for higher salaries and attracted more interest from qualified applications. In addition, the level of funding provided for MCM managers meant that staff could focus their energy on one project rather than needing to sustain their salary through multiple funded activities. In the case of both the OHCU and the OHP, the MCM manger was reported to play the most critical role for sustaining MCM collaborations. The MCM Manager became what could be called a 'critical connector,' or as described above, a key actor or champions within the network. Their role, integrated within the MCM steering committees, mobilized technical and administrative activities through the Secretariat on behalf of the MCM members.

The MCM Manager position, in both the OHCU and OHP, have always been donor funded. Although these external positions create certain challenges for long-term MCM sustainability, one interviewee was quick to describe some of the benefits that a non-government position offered. This included flexibility for the managers to use their time for collaboration and to create priorities that benefit many partners beyond the position's 'host' unit or department. Donor funding allowed for these positions to be seen as an 'added value,' providing additional support for the host department within the ministry. One interviewee described the OHCU Manager's support to their department:

> The OHCU Manager has a unique role. But you know, when OHCU was established, they operate separately, not under the coordinator… and she is not a government official. She has more flexibility and more time to coordinate and also the OHCU supports the government officials, structures [Th 7].

Along with supporting and often times leading the MCM technical activities, the managers are also considered an asset to the work of the ministry and department in

which they are based. This quote further notes the added value of the OHCU for the host department/ ministry, and this is in large part tied to the Manager acting as such a critical connector. In both Thailand and Vietnam, this sentiment was shared with me over and over again. The fact that the Manager position was funded through donors ensured that this individual could focus on the process of collaboration beyond the host ministry. On the contrary, traditional government funded position would require the worker to align with ministry programs and priorities. Unless the MCM were created through traditional ministerial-led policy and program development, they are not in a position to allocate funding for a worker to be almost entirely externally focused. This creates enormous challenges when considering network sustainability, mostly because low resourced organizations must first fulfill their own sectoral mandate before being able to allocate resources to internal and external collaboration.

One obvious challenge to donor-funded management positions was that donor funding cycles and allocations have an element of uncertainty and a lack of transparency. Particularly in Thailand, a high level of turnover was observed for the OHCU Manager position. Strong managers have been selected and then eventually, they have left for more stable government positions:

> The coordinator is not a permanent position, the type or turnover for the coordinator. I think we have [had] three of them now. I think the first and the second one at the end, they were recruited as the government officers. So they got the permanent position. So they move on. Okay. The second one moved to the health policy and planning and work closely with the AMR antimicrobial resistant group. And the third one is the current Manager. So that's, I think that's

> challenging but in general, because I think we get very, very good coordinators. So actually the projects is going on and you know, it's, it's a very good, I think it's very effective. So for me, I'm thinking if for the long-term sustainability, we have to figure out how to make it become more sustainable or otherwise in the project, if the US CDC stops paying, then what? But the government, because it's not the government position, in order to get the budget from the government to support the coordinator is impossible [Th 7].

This interviewee uses the term 'impossible,' to describe the potential of having the government department/ministry fund the OHCU Manager as a permanent position. This allowed for a further line of questioning that illuminated the challenge in designating "collaborative" government positions within one particular sector. This reinforced my view expressed above: Why would MOPH pay for someone from their sector to serve many other sectors when they have many needs in their agency?

In Vietnam, the non-government position became a huge advantage for the OHP at the start of MCM development. The level of donor funding allowed for sustained positions in the Secretariat that were funded at higher salaries than Vietnamese government positions. Many interviewees reported that this level of funding allowed for less turnover, even for the Manager, and also ensured that highly skilled workers were hired into these positions:

> We've been very fortunate for a long period of time to have a very capable Manager, paid through project funding. And you know, so there's a bit of an individual element in that. Um, so she is the leader of the Secretariat on a day to day basis, but of course she is under people inside the government system. The

> person that is heading that for our mechanism is a director general level of the department. So he's not very junior. He's quite senior. Um, he'll actually retire in August. It's a big step because there's many more that one step below the vice minister. That's who the [MCM Manager] reports to. So, but that's one of many, many things that she does. It's a very, very part time, you know, aspect of her whole job… she works, I mean, she's just very capable and they have been fortunate to attract someone who has the happy situation of not having to rely fully on her salary. She's got a certain family background and she enjoys it, so she's the sort of person that's extremely good at working with all levels, including ministers and vice minister and so on. But uh, that's been a bit of a, a, you know, if, if she would leave and they were to replace her, you, you certainly wouldn't predict, um, all of that would, would necessarily come with it. With the replacement [Vn 9].

These quotes highlight the necessity of donor funding to support these managers and critical connectors. This reinforces the construct that MCM structures are developed and sustained by the tensions created between two interdependent factors–donor influence and organizational capacity to participate. However, it also underscores the challenges MCMs will face as donors reduce funding. In fact, if MCM structures are developed with interdependent poles, then how can structures be adapted beyond these tensions if one pole, such as donor funding, is reduced or removed? One donor interviewed in Vietnam confirmed that turning the donor-funded positions into government-funded position is likely to pose major challenges for the OHP sustainability:

> The other prospect would be that you would end up getting [a government funded position] sort of if [government] people were assigned to that role, either there'll be sign on a very part time basis or they would be people that had little influence or pull within the government system and they got stuck with it. I mean... there's not a strong evidence base on this, but it's also extremely well understood here that most people in the government have to buy their positions and then they have to recoup the investment. There's no incentive to someone just someone to buy a position like this [Vn 9].

For both the OHCU and the OHP, the fact that the Manager position was posted outside of government and supported by donors, provided a level of prestige that attracted really impressive and well-connected candidates. In addition, the positions are funded at a full salary and the roles and responsibilities are created to support the MCM, allowing the worker to function beyond traditional ministerial departmental mandates and work plans. If these positions were created within the host department/ministry they would not be able to focus solely on the work of the MCM.

In addition to funding the Manager and staff positions, the donor funding has also influenced who is hired in to support the Secretariat staff. In Vietnam, the OHP used donor funding to hire a foreign national to support partnerships at the Secretariat. This position was filled by someone who had formerly worked for UNDP and was familiar with all the donors and partners who needed to collaborate for the OHP. This individual described their own position:

> I am contracted as a consultant to the secretariat of the partnership, well I guess technically I am contracted as a consultant by the governor of Vietnam using

> USAID money channeled through UNDP here in countries. It is money for a project funded by USAID post here in Vietnam on strengthening One Health capacity. That is sort of a compliment to the global EDPT work. So I am contracted as a partnerships and advocacy and coordination specialist. For that project based at the Secretariat of the OHP in Vietnam.
>
> *How long have you been doing that?*
>
> This project has been running since 2017 and I was contracted in October 2017 or September. But I had worked previously in similar roles with the Secretariat before that on different projects. The primary funding until July of this year for the Secretariat has come through a series of projects. Initially, a UN joint program was channeling some money through the government to support that Secretariat, and then kind of on and off over the last 6 years or more. A few successive USAID projects have supported the Secretariat of the partnership [Vn 9].

This same interviewee also described in detail the challenges that the government of Vietnam will face to sustain good staff after the transition from donor funding proposed to have occurred in July 2019. The interviewee reflected on the Secretariat's dependency on donor funding:

> It's also very challenging because the government cost norms for paying staff are very low and no one can live on those in Hanoi and nobody's living on a government salary. I mean it's unheard of… it's impossible. So where the government has allocated funds, um, well the government is able to mobilize administrative staff. But anyone who can work on substantive issues, particularly across more than one ministry, they cannot afford to mobilize those people with

government norms in permanent government positions. Obviously people do apply for those, but there's a whole sort of two layers of remuneration and it's extremely complicated and hard to pin down. For example, if the government allocates a normal salary for a secretarial staff the amount they'll pay is somewhat less than $400 a month. So that's quite difficult for a professional to live on in Hanoi.

What do people usually do?

They don't do those jobs. If it's considered really part of the government system, then there'll be a government staff working on it in those government staff will either be supplementing their income or each ministry and Department and agency has its own way to generate revenue informally and they'll supplement like that [Vn 9].

Although donor funding was supportive and foundational for MCM development, it created unforeseen challenges for MCM sustainability. This highlighted and reaffirmed the fact that MCM structures are developed and sustained by the tensions created between donors and member organizations. The operational structures and the positions for many critical connectors, were established outside of the government system. Donor-funded MCM managers provided the foundations for MCM development and as discussed later in chapter 8, created and operated many of the collaborative junctures within the network. However, this also brought to light the interdependent challenges that can be created through starting conditions and these need to be assessed in light of long-term goals for sustainability. In the case of MCMs, the starting conditions created

paradoxical tensions that either do not, or will not lend to structural adaptability when one pole is reduced or removed, as is the invariable goal for most donor engagement.

Donor influence shapes government mechanisms used to support MCM development

Through the data analysis, it was apparent that there existed a mutual interest and partnership between donors and key MCM member organizations. Governments in both Thailand and Vietnam actively pursued donor input and influence, either technical or financial, reinforcing the interdependence of these structural polarities. This mutually agreed to partnership led to the development of new approaches for collaborative policies and collaborative funding mechanisms. One interviewee from the Vietnam government described their engagement with international donors as a true partnership:

> So we want to promote the connection and communication with the two and more join action between the two sectors at least. And so we work closely with USAID and US CDC to discuss how we can better off the Vietnamese partners to comply with the international health coalition capacity because Vietnam wants to comply with the capacity required by the IHR WHO. So I think it is important for the country to be within capacity [Vn 7].

It was in the spirit of this donor-government partnership arrangement that multiple interviewees reported the frequent communications between donors, namely US CDC and USAID, and their ongoing involvement with the OHCU and OHP. In Thailand, both TUC and USAID were involved in the MOU development and signing, first in 2013 under the USAID EPT1 funding and later in 2016, under the USAID EPT2 funding. In fact, one donor remarked that they influenced the inclusion of the Ministry of Education on the adapted MOU in 2016. This was in large part because the donor funded another

One Health-focused EPT2 project, the USAID One Health Workforce project, to support and develop university networks:

> *Do you think it was important to have that second level of MOU signed?*
>
> Oh yes. Because uh, you know, during that time is at the departmental level. And I think for us we would like to include the ministry of education because our project also supports the One Health Workforce project that we work with the university network. So we would like to at the beginning that was signed under the Thailand One Health University Network (THOHUN) as part of it but when we further discussed whether or not to bring in the Ministry of Education so bigger level with so we get more participation. Yes [Th 5].

Another interviewee in Thailand talked about how USAID funding supported One Health awareness and provided a necessary avenue for the sustained partnerships in Thailand that eventually influenced the development of the OHCU:

> The USAID regional office in Bangkok [influenced] the way how we interact with the OHCU because for the [USAID] Emerging Pandemic Threat [program]… the [USAID EPT1] RESPOND project provided the funding to the Bureau of Epidemiology on the Provincial One Health project. So that's why, you know, because for Thailand we are seeing that when you working group is already established even is very informal, but it becomes more formal and more interactive because of the H5N1 outbreak in 2003 so we start to work together and you know, they learn a lot more about One Health [Th 7].

The influence of donors supported new pathways, and in some cases, junctures, for collaborative engagement. These inter-organizational pathways–structurally supported

connections between organizations–, were then operated by critical connectors. However, just because a pathway existed between organizations, did not mean that a cross-boundary juncture was operable. Both the inter-organizational pathways as established, and the critical connectors operating within the system, were influenced by donor funding or strategic program objectives. The MCMs developed alongside these influences, and were particularly shaped by the US CDC, DTRA and the USAID EPT2 programming, namely P&R and One Health Workforce.

Similar to the experience in Thailand with the development of the MOU, in Vietnam, donors and multilateral organizations actively participated in the development of the Circular 16, which has become one of the most influential documents in guiding how the MOH and MARD work together. Also in Vietnam, the government has a structural arrangement for international donor funding. All international funding must flow through the ICD which belongs to MARD. Although it belongs to MARD, it has very strong relationships with the MOH and can distribute funding between departments easily. In fact, interviews revealed that all organizations perceived ICD to be a neutral platform for coordinating between ministries and departments. This created unexpected efficiencies in the distribution of donor funds intended for One Health activities. During my interviews, this was the first time I was struck with the concept of interdependence. The ICD is entirely dependent on the fact that funds are received from a donor organization. Similarly, the donors would not be giving funds if there weren't member organizations prepared to use them. This created an interdependent structure at the start of collaboration and this structure was inherently rigid. This is a direct example of a paradoxical tensions that resulted from donor and member-organizational starting

conditions. One interviewee from the OHP talked of the inherent benefits of the ICD while pointing toward the potential challenges for MCM sustainability:

> In Vietnam any project gets funding from an international donor who Ministries must be coordinated by the ICD… So in some ways having the international funding coming through the central unit has supported a neutral platform, but if that money goes away there is no backup plan [Vn 2].

This underscores the challenges inherent in the tensions established at the start of collaboration. If not created with process-based structural conditions in mind, these tensions may be reinforced and become too rigid for adaptability in later process-based scenarios.

Creating even more of a donor-dependent structural dependency, the position of the ICD allowed for the engagement of high-level leadership and the OHP received a level of recognition it would not have otherwise had if it weren't for initial donor funding. In some instances, international donors alone were responsible for providing a neutral platform and the involvement of a wider array of stakeholders and organizations, beyond the scope of traditional One Health. One donor interviewed in Vietnam talked at length about the historical context that set the stage for the OHP. In particular they noted how the partnerships that had been established early in OHP development actually necessitated a more inclusive 'channeling' of partners for the OHP:

> It is primarily a historical reason. The time when avian influenza H5N1 was first a very serious concern in Vietnam, it also corresponded with a period where the UN in Vietnam was strongly pushing for UN reform. At that time, Vietnam volunteered as one of the eight pilot countries for delivering as One Initiative for

> global UN reform focused on the country level. The UN resident coordinator in Vietnam proposed a UN joint program with four agencies. So WHO and FAO really playing their standard roles, UNICEF addressing communications and UNDP supporting coordination… So there was this historical context where UNDP got involved in avian and human influenza in Vietnam… I suppose much more than in any other country… But some of our UNDP colleagues would point to One Health, Ecohealth, environmental health, connections. The idea that UNDP has quite a strong role on climate change globally, on sustainable development. The strong connections for example in Vietnam with both MARD and MNRE, working on things like climate change in particular and other energy and forestry and all sorts of things… But in reality, my personal opinion is that it is more about the historical context. UNDP can be quite neutral on the animal health/human health, I wouldn't say divided and in some ways it has allowed for that neutral channeling rather than having to locate it [in one ministry] [Vn 9].

The OHCU and OHP have equally benefited from the neutral platforms that have allowed for inclusive partnerships. However, these platforms, whether government mandated as is the case for the ICD, or donor influenced in the case of USAID EPT2 programming and UN reform, create donor-dependent tensions. It remains unclear if and how this would change when in theory, the Thailand and Vietnam governments will sustain the MCMs directly through government funding mechanisms.

The involvement of donors in nearly every aspect of MCM development and operation has had profound influence on MCM structuration at both the start of collaboration and during the process of collaboration. This has been generally viewed as

positive in both countries. For both OHCU and OHP, the time and trust that developed over long-term collaborative engagement, either by necessity, or in peace times, led to the foundational relationships that have served as starting conditions for the MCMs. In some cases, these partnerships were years in the making. In addition, the unexpected and emergent nature of disease threats created a sustained political rhetoric and a 'policy window,' as described by Kingdon (1995) and 'policy problem,' as described by Weiss (1989), that allowed for donor funding and continued partnership to support these collaborative engagements over many years.

And yet, government willingness to collaborate was essential in order to actualize the benefits of donor funding and partner interest. Much of the time and trust necessary for effective partnership hinged on the government's willingness to receive, use and engage in donor-led or donor-funded activities. However, organizational willingness is interdependent with donor engagement and this has created a level of dependency which can be viewed as a paradoxical tension that influences structuration. Yet in the case of most MCMs, this structuration happens in the absence of pragmatic visioning on the part of donors and MCM leaders. In fact, these tensions are often reinforced over time. In the case of OHCU and OHP, the inevitable reduction in donor funding will severely disable or thwart the ability for MCMs to become government sustained networks.

Organizational Capacity as a Paradoxical Tension

The capacity of member organizations to contribute to initial MCM discussions has had great influence on the development of MCMs, countering donor influence to create the necessary tensions for MCM structuration. For both the OHCU and the OHP, it was clear that MOPH and MOA in Thailand, and MOH and MARD in Vietnam, were the primary

organizations at the start of collaborations. Although some conditions, namely donor influence, allowed for the theoretical inclusion of other ministries such as the Ministry of Interior (to reach subnational levels in Thailand), MOEd (as a result of USAID donor funding for education related projects such as RESPOND and One Health Workforce), and MNRE (as a result of UNDP influence on climate in Vietnam), their participation was rarely reported as being substantial in either of the starting conditions or the process of MCM development for OHCU and OHP. However, it became evident that organizational capacity to participate was in some cases a limiting factor, and in other situations, a shaping factor that created interdependent tensions with donors resulting in both positive and negative implications on MCM structures and ultimately sustainability. The most pronounced impact was in the mismatch in organizational commitment versus capacity to participate actively. This influenced the dynamics and operations of MCM Leaders and Managers. In fact, the flood of GHSA funding at the start of collaboration allowed for a false pooling of resources. In this case many member organizations, whether committed, capable, or interested, volunteered their participation and involvement without fully examining their own incentives or ability to participate. As donors look to reduce funding in 2019 and 2020, this creates a vacuum and threatens the collapse of MCM structures that currently exist.

Human, Time and Financial Resources to participate

Organizations that were asked to participate in a multisectoral, One Health approach, frequently had differing levels of resources. This is similarly true in both Thailand and Vietnam, with human health having consistently more resources available than animal health and environmental health sectors respectively. In addition, other organizations like

education and department of interior have been historically less engaged in the One Health discussions. These organizations, even when not considered 'resource poor,' may not see the value in contributing, and thus may not choose to allocate financial, human or time (time spent in meetings or contributing to technical activities) resources to participate. This lack of resource availability–by choice or by quantity–at the start and during the process of collaboration, has had varying impacts on how the MCMs were shaped in their development. One interviewee in Thailand explained that resource scarcity impacted the level of leadership who were able to attend MCM meetings, thereby limiting their contribution to decision making:

> For other smaller agencies like department of livestock development because they are smaller, and they have limited personnel resources. The person that they would send to the meeting is more junior, you know, so, so it's not that they don't see the importance but they just cannot afford, you know, like sending someone big here. Well because it's [the OHCU] at the ministry, the director of the bureau is the representative, you know, like from the ministry for example, versus a more, a lot more junior staff from the Department of Livestock and Development [Th4].

The interviewee went on to explain that this likely impacts the advocacy for One Health within their sector, and may potentially impede the further use of resources or decision-making authority that was needed to shape their inclusion in the MCM:

> So usually they [DLD] take back the message and maybe you know, coordinate after that. Sure. But I think, yeah, maybe I don't know and I don't have examples of this but I'm not sure if you know, if, if that person doesn't see some of the

> issues or public importance, they might not convey the whole message. The decision makers or the people higher up might not have learned about, you know, the information that were discussed during a meeting [Th4].

This highlights the fact that even though member organizations may have great interest and relevance in One Health discussions, their capacity may seriously hinder their involvement. Through multiple interviews, it became clear to me that organizational capacity was a key factor in power and hierarchy within the network. Organizations with fewer resources simply could not 'afford' to take a leadership role. This ultimately influenced their power within MCM decision making. This reflection on organizational capacity, and ultimately power, became particularly influential when looking at the leadership models that are created to support MCMs.

Member organizational capacity to lead

When considering leadership, organizational capacity directly impacted the ability to implement collaborative leadership models within MCMs. Although both Thailand and Vietnam discussed rotating leadership models that could support each MCM member organization to be involved, this was not actualized in process. One interviewee in Thailand described the difficult the OHCU has faced in actually moving the OHCU Secretariat to another organization in order to fulfill their original intention of a rotating leadership model:

> Actually, at the technical level we discuss a lot and that we should rotate and you know, every two year or every other year. But because it seemed like at the MOA, within their Department, they are not ready. That's why OHCU is still housed at the MOPH right now. Right now in Thailand and other countries the MOH

compares with the MOA giving up men, they [MOH] have more staff, they have more capacity and actually in Thailand, MOPH is always the lead for those One Health issues. Those are the meetings that are called at the MOPH. So I think it is good to have rotation to take… but it's really challenging, I can tell you [Th 7].

This interviewee recognized that in theory a rotating leadership model would allow each organization to participate while in reality this is nearly impossible. This was repeated in many interviews, and while the assumption would be that other organizations were frustrated with their inability to lead, it was surprising to learn that most were supportive of the current leadership arrangements. Although circumstantially different, the general support for static leadership models remained true in both Thailand and Vietnam. In Vietnam, the OHP Secretariat is hosted by MARD yet the MOH often takes the lead for organizing technical activities. One interviewee from the MOH shared how their resources are needed so frequently that even through MARD is the lead for the OHP, they don't feel excluded in any way:

So you're from MOH. Do you feel like the MOH, do they feel included enough in the OHP and in the decision making?

Yeah. Even though the MARD takes the leadership in most activities, the MOH takes the more important roles…. Most of the OHP activities they are based on the support and the MOH contributes more than MARD and I support that. And also the OHP people are… maybe the human resource in the animal and health are also limited so they don't contribute as they expect… For example in the rabies workshop and planning we also play the main/key role in hosting/conducting the activity [Vn 10].

This underscores the challenges inherent in collaborative leadership models. The lack of resources or perceived capacity impacted which organizations were willing to host the MCM Secretariats. One donor of the OHCU described how lack of resources influenced which organization would host, or lead the OHCU:

> [There is a] Burden on host agency. Since the OHCU began, it is like no one wants to be the focal point. So I think the most important tool is to have the One Health Unit is to find a focal point. But people still think that to do something you need money, but from my view I don't think it is necessary. We can share the resources or we can begin from the concept that we want to work collaboratively on rabies or something like that where you have the same target why don't you just do it together.
>
> *So why do you think it has been challenging to find a focal point?*
>
> As I said, it is about money. So I think it is a challenge because everyone has their own work so they don't want more work.
>
> *And is there an expectation that is someone is a focal point that they will provide funding or find resources for the coordinating unit?*
>
> Yes they should [Th 1].

This clearly illustrates how organizational capacity directly influences which organizations lead the development of MCMs, and in turn, which organizations are influencing the decision making for structuration.

Organizational incentives and willingness to collaborate.

Finally, it is not always about organizational capacity, leadership and One Health awareness. In some cases organizations don't see the value in contributing. Although One

Health efforts, particularly those that are donor led, are pushing for inclusive models, it wasn't always clear why each MCM member needed to be involved. This may mean that not all organizations have the same goals/ incentives to participate. One member of the OHCU shared an instance in which they were asked to explain to the MOEd and the Ministry of Labor why they needed to participate in a One Health competency development activity:

> During the first lecture they ask "why do we have to be here?" Ministry of Labor and MOEd ask why they have to be here to set up the One Health Competency Framework. I said stop and I will keep you up to date and ask me and I will answer one by one each ministry. What do you think if you ask why the MOEd should be here so then when they understand why I should pay some. I say "what happened?" when there is an outbreak. In Brazil when we have virus or something. You need to call the labor back and what happens when how could you inform them without any panic? And what happened when we had the flooding and the people don't know how to manage with rabies? With rabies happen at a school, who is going to be responsible for that? They say, MOEd and that is why. MOEd, labor, and social security should be here. So then when they understand and are open about that that they say "okay" they have to be here [Th 5].

This was similarly shared as an experience in Vietnam, one interviewee stated this simply:

> So I think that environmental is not yet really engaged in the collaboration. I think when we talk about health, they think that it is a duty of MOH [Vn 7].

In these quotes I began to realize how the inherent goal of inclusion and equality of participation among many partners in One Health, can actually challenge MCM sustainability. For example, not all ministries have the same inherent need to collaborate for zoonotic diseases, even if they initially want to share in the collaborative resources. This mismatch in initial commitment, versus incentives and willingness to participate influenced how organizations were involved. I began to realize that an equality of choice in how and when organizations participate may be more important than having equality of participation. In the end, MCM sustainability, particularly in the face of a transition from donor to government funding models, may depend on the ability for organizations to negotiate for themselves on how their efforts are best spent as part of the MCM.

Member organizations who were included in both the early and later stages of MCM development and implementation struggled with various barriers to their participation. What became clear was that these barriers were both based on capacity (human, time, financial resources), and their incentives to participate, or buy-in to shared goals. Not every organization had the same incentive to participate, or the same perceived value from their participation, this may have been based in part on reality and in part on their lack of One Health awareness. However, in the face of initial donor funding, this organization capacity was often mismatched with willingness to be involved. This led to a false pooling of resources has challenged MCM sustainability beyond donor funding.

This chapter highlights the critical role of interdependent starting conditions as they influence the structuration of MCMs. These endogenous starting conditions are then influenced by exogenous systems factors beyond the control of leaders, managers and participants in the network. The next chapter will examine the role of leaders within this

system, first identifying their vulnerabilities within the system and then exploring the critical role they play to influence structuration toward network sustainability.

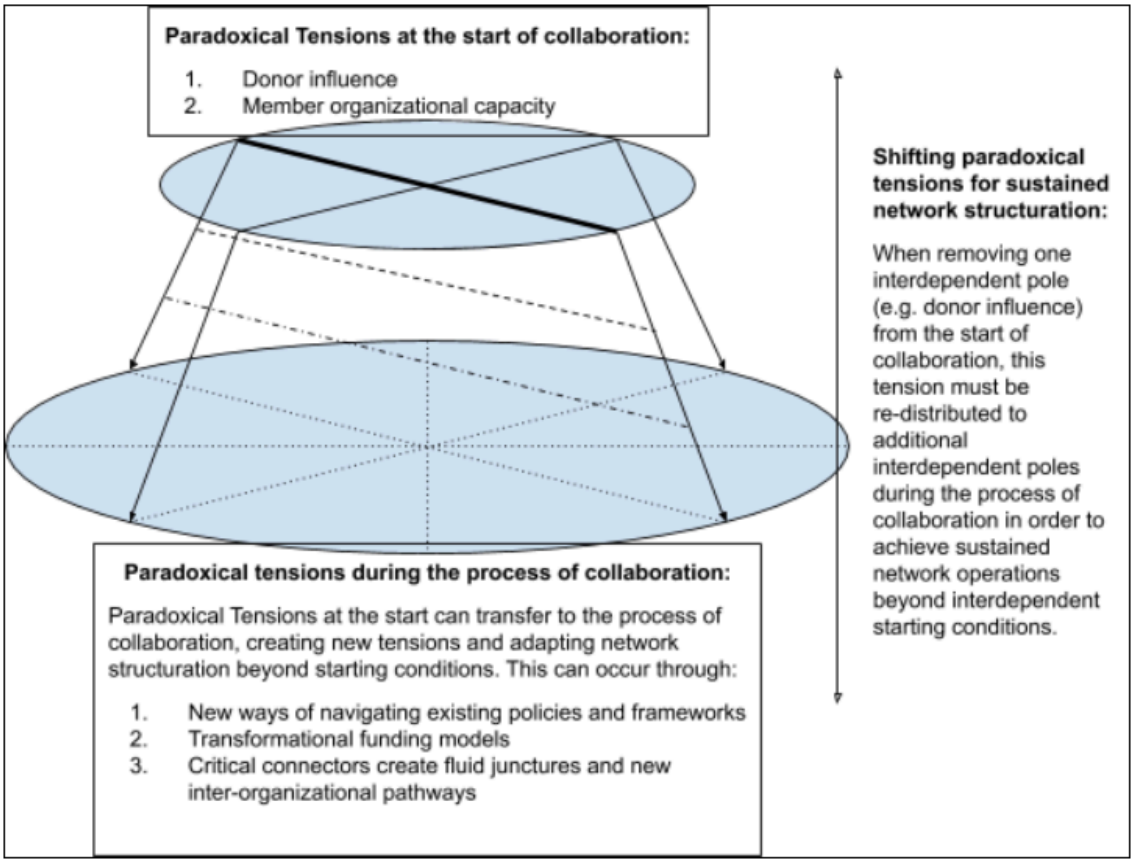
Chapter 8: Redistributing paradoxical tensions for sustainable MCM structures

In Chapter 7, MCM development was characterized in light of endogenous and exogenous systems factors, ultimately highlighting the necessity of leaders to manage the interdependence of starting conditions that are foundational in MCM structuration. As MCMs are established, leaders are implicitly tasked with managing two primary endogenous factors–donor influence and member organizational capacity–toward MCM sustainability. These endogenous factors are shaped during the process of MCM development by exogenous systems factors such as the culture of governance, existing government structures and emergent environmental or political factors. In the analysis of these primary factors, it became clear that donor influence and organizational capacities are not problems or issues to be solved, rather they are paradoxical tensions that MCM leaders must be prepared to manage. Leaders, if aware of these tensions, may be able to better manage paradoxical tensions to influence the development of more adaptable structures that may be able to support MCM sustainability.

In Chapter 8 we will examine the vulnerability of leaders within MCM development, while also, using policy field mapping (Sandfort & Moulton, 2015), uncover the collaborative junctures that exist within pathways between MCM member organizations. Inter-organizational pathways can be viewed as structurally supported connections between organizations. These pathways can be created through overarching policies and frameworks (e.g. the 2013 and 2016 MOUs in Thailand, the OHP Framework, or the Circular 16), or allocated funding. This exploration of inter-

organizational pathways provides insight into how leaders may be able to support a transfer of paradoxical tensions from starting conditions to process-based tensions through the operation of collaborative junctures. This may result in more flexible and adaptable structures for MCM sustainability. **Figure 4** constructs the way in which paradoxical tensions can shift and adapt from the start of collaboration to the process of collaboration.

Figure 4: Shifting paradoxical tensions for sustainable network structures



It is possible that leaders, with support for critical connectors in their network, can support this shift in tensions. Because the starting conditions are so dependent on few tensions, it is important that leaders support critical connectors to re-distribute the tension to additional process-based interdependencies within the network. Yet leaders are not

immune to donor influence and may not be consciously aware of how their early decision making will influence MCM structures particularly at the start of collaboration. It is possible that leaders, given the right tools, could operate collaborative junctures to support a transfer of tension from an interdependent starting condition, to a more distributed model of interdependent process-based tensions. We'll use policy field mapping to illustrate how leaders, through their decision making, can operate collaborative junctures in a way that influences network sustainability and ultimately, the structures that support MCMs.

The role of MCM Leaders in managing paradoxical tensions

The MCM leaders are tasked, whether consciously or implicitly, with managing paradoxical tensions at the start of collaboration and later during the process of collaboration. How they manage these polarities over time influences MCM structures as they move from starting conditions to the process of MCM development. In order to understand this, it is necessary to look at how each interdependent starting condition influence MCM leaders and their subsequent decision making.

In both Thailand and Vietnam, by design, one organization is selected to host the MCM Secretariat. The director of the host department or unit leads the Secretariat, and as a result, it is necessary for members of the steering committee to trust and willingly rely on the work of the host organization and the leader that has been selected. As discussed in chapter 7, organizational capacity influenced which organization could support the MCM steering committees and the day to day management through the Secretariat. Both the OHCU and the OHP were shaped by the structure of the Secretariat and the static leadership models that have been used in the process of MCM development and

operation. Beyond organizational capacity, leaders were also influenced and constrained by donors, vacant positions and by their country's culture of governance. However, within the context of these challenges, opportunities remain to improve decision making toward the development of fluid collaborative junctures and the creation of inter-organizational pathways that support a re-distribution of paradoxical tensions at the start of collaboration to paradoxical tensions that support the process of collaboration.

Donor Influence on Leadership & Governance of MCMs

In Thailand, the TUC and USAID, are the primary funding partners of the OHCU. Both partners were involved in the development of the MOU and as a result, have been allowed to sit on the OHCU Steering Committee. One interviewee gave a nice analogy of how the Steering Committee and Secretariat work together, explaining that TUC remains an observing member of the Steering Committee:

> Right. So they central body that coordinates all the member countries. So if you can think about it like the member countries are the partners or the stakeholders and then the Secretariat is the core operational unit of the OHCU.
>
> *I see so the [steering] committee is sort of like when you bring all the member countries together to vote. Okay. Got It. That's very helpful. Okay. Um, now are USAID and CDC, are they members of the committee?*
>
> Because CDC, because we fund them, so we, we are there as just like as an observer or so is to be informed. We don't usually help them make a decision.
>
> *Does the CDC have a vote usually?*
>
> No.
>
> *I imagine if CDC wasn't funding them, they may not have a seat at the table?*

I think there was still invited us because we have quite a significant one health portfolio in this country [Th 4].

This highlighted the partnership and the interdependence that exists between donors and member organizations, particularly the organizations that host MCM leadership and Secretariat.

Later, when discussing the donor's interest in sustainability, the interviewee described how TUC and USAID had requested the OHCU to conduct the USAID P&R project funded OH-APP. This showed how donors had a strong influence in which activities the OHCU participated, and this was both based on close partnership and involvement, as well as funding and likely, power differentials, or a willingness to appease the requests of donors:

Do you think CDC will continue funding the unit and if they don't, do you know what would happen?

So right now I think so we don't have plans to withdraw our support, but the level of funding also depends on what CDC gets from there, right? But right now I think we planned to support until they are sustainable.

Got It. Do you know, do they have an active plan to become sustainable?

Yes. I'm not sure if you've heard the OH-APP workshop, I mean that they just did that last year. So like Thailand, this is funded by P&R USAID. So they asked the OHCU to hold a national OH-APP workshop using the tool. Right, right. And there were recommendations and actions coming out of that workshop and those will shape the OHCUs direction going forward [Th 4].

In this instance, the donor suggested that the OHCU use their assessment tool and create an action plan to support MCM capacity and performance as outlined by the 29 OH-APP indicators (Appendix B and C). The results of this assessment, as the interviewee indicated, have shaped the further development of the OHCU. Similar experiences were shared by the OHP, which, like the OHCU, has been partially supported by the USAID P&R project and has also participated in an OH-APP workshop and, like Thailand, also has a final report that has guided further development of the OHP (Appendix D and E).

Organizational change and shifting/ vacant positions

Because the OHCU and OHP are hosted by government organizations, the MOPH and MARD respectively, any organizational change, or leadership change influences how the MCMs operate. As described in both Thailand and Vietnam, changes in appointments, or shifts in organizational structures influence leadership directly. For example, in the case of the OHCU, when the MOPH reorganized, the OHCU transferred to a new Bureau and this impacted the leadership because the director of the host Bureau becomes the new chair of the OHCU Steering Committee and leads the Secretariat team that is now hosted in that Bureau. One interviewee in Thailand described the influence of this change:

> So it has changed, uh, since I started working with CDC. So it's housed within the MOPH, so they provide like in-kind facility. So the office is housed within the MOPH. It used to be under the Bureau of Emerging Infectious Diseases Right now is with Bureau of General Communicable Diseases, but still within the same department, Department of Disease control.
>
> *I see. Okay. And do you know, um, how has it, is that the change that happened since you've started working at CDC? It changed from one bureau to the other?*

> Right. And meaning that the directors are different and then the thing, the way that that is being managed is a little different. It's more effective now I will say [Th 4].

In this case the change in leadership was actually supportive. However, MCM leaders are vulnerable to organizational change and there is a possibility that leaders appointed may not have the One Health awareness or the interest to support the MCM effectively. Another interviewee from Thailand went on the describe how this organizational shift would create many structural changes, even with strong leaders who supports One Health:

> Uh, the [new] director of communicable diseases. He's like a principal investigator for the provincial One Health Project. When we started the program in Thailand and the response so there should be no problem. He's very, very strongly support the One Health program. But uh, you know, to align these with the new structure with the new disease, this is a bit challenging and I think they may have to find how it fits. But in general for the operation I do not think there should be any problem because the OHCU get a very strong support at the policy level. But how to fit with the new structure, that's something that they are still working on it [Th 7].

In this instance, the change in host unit, and the ultimate change in leadership had a positive influence on the OHCU. In Vietnam, a similar change in leadership resulted from a retirement/ resignation and this may pose new challenges for the OHP. One interviewee in Vietnam described their concern over this recent change:

> For example the guy in the previous… he was very supportive of the One Health concept. So this year he stepped down. It is a new lead minister and he is in charge of the issues. And because he is new maybe he does not totally understand the One Health concept. So it can be challenging, so it is… the One Health approach takes more time and to him to understand the family with One Health and so I hope they can support it. I think that one is an issue that they need to overcome in the future. But now they have someone to document it–the national One Health action plan in 2020. This can provide more background on how to communicate more frequently and have more activity together. Even though this is a barrier I think they can overcome it [Vn 2].

These shifts in organizational structure have created major shifts in MCM leadership and as a result, in the structuration of the MCMs as they developed into mature networks. Changing leadership presented both challenges and opportunities, either supporting or hindering the structuration of MCMs and the subsequent collaborative pathways and junctures that arose.

Culture of governance

The culture of governance, an exogenous systems factor, is also an important influence on MCM leadership. For example, in Vietnam, it is only seen as culturally appropriate to change leadership if a leader is publicly acknowledged as underperforming. This makes it extremely difficult to make changes in a highly diplomatic and political environments like One Health. This came out very clearly in one interviewee from the Vietnam MOH:

> The ministry of agriculture… that is because of history because PAHI comes from the ministry of agriculture and then when we set up the OHP we avoid… it is also sensitive and we avoid to change the leadership responsibility.
>
> *Can you explain why it was sensitive?*
>
> In Vietnam, the culture when you are the leader. So if you don't have any mistakes or something went wrong… So there is no reason to change [Vn 10].

In Thailand they don't have this same historic culture of governance. Although the OHCU was designed to support a collaborative leadership model where the OHCU Secretariat would rotate with the chair, as previously discussed, the host organizational capacity, or lack-there-of, has remained a barrier to leadership change within the OHCU and thus the Secretariat remains within the MOPH.

MCM leadership remains vulnerable to external organizational factors beyond their control (e.g. organizational structure, key position changes and the existing culture of governance), and these changes are likely to have profound impacts on the operation of MCMs. In addition, structural starting conditions, particularly those influenced by donors, set the parameters for how leadership operate to either create, sustain or hinder collaborative pathways and their associated junctures. These factors influence MCM leadership models, ultimately impacting the decisions that influence structuration, as well as the outputs and outcomes of MCM collaborations. It became clear that leadership plays a pivotal role in MCM development and Leaders have profound influence on how structures are reinforced over time.

Operating collaborative junctures for sustained MCMs

Structures, often through formal and informal policies, frameworks and collaborative procedures, define the boundaries of MCM collaborations. **Figures 5-8** showcase example policy field maps created for the OHCU and OHP as structures influenced the network over time. While these maps are illustrative and not meant to be an exact map of the scenario in either country, it is easy to visualize how Leaders might use these maps to navigate–open or close collaborative junctures or create of new inter-organizational pathways–in the process of MCM development. However, as mentioned in Chapter 7, just because a pathway exists, does not mean that there is an operable boundary spanning juncture. Drawing on Quick and Feldman (2014), boundaries can be viewed as dynamic, emergent, relational and active. When viewed as junctures rather than barriers, boundaries can 'support resilience to cope with novel problems, system disruptions, and resource constraints,' (Quick and Feldman, 2014, p. 675). For example, the 2016 MOU in Thailand expanded the OHCU (Figures 5 and 6), creating new pathways and the opportunity for new collaborative junctures. In this instance, the 2016 MOU created a pathway for including the Ministry of Labor as part of the MCM. However, the ministry did not fully understood their role and was not actively participating in the OHCU. More recently, a critical connector in the THOHUN network began establishing a relationship and created a collaborative juncture where it did not previously exist in that pathway, once established this could be operated by that individual for more fluid collaboration. By understanding where in the network junctures exist, cross-boundary engagement can be expanded.

As highlighted in the example above, inter-organizational pathways and their associated junctures are often operated by individuals, either leaders, or in many cases the critical connectors within the network. MCM leaders and critical connectors create and sustain these pathways, almost as though holding the 'keys' to open or closing important collaborative junctures. Three primary factors emerged to influence the opening or closing of these junctures: (1) rigidity of flexibility of collaborative policies and frameworks, (2) the structural transformations that took place during the process of MCM development, and (3) the critical connectors that influenced the system through their positions, or their access to and agency within certain organizations. When considered in the context of **Figure 4**, and the need to re-distribute paradoxical tensions over time, these factors may provide insight into the role MCM leaders may play in supporting the development of sustainable network structures.

Rigidity or flexibility of collaborative policies and frameworks

Existing structures framed the boundaries of collaboration, and influenced the development of the OHCU and OHP. As discussed in the case studies presented in chapters 5 and 6, structures like the MOUs in Thailand, the circular 16 and the ICD platform in Vietnam, all influenced how the OHCU and OHP developed respectively. These structures were a product of many of the starting conditions described above, namely donor influence on One Health awareness, history of collaboration and funding for activities that supported global health security. These structures have continued to be shaped and reworked in the process of collaboration and the further development of the OHCU and OHP. However, the structures as they existed at the initial development of the MCM clearly shaped the network as it was established formally in Thailand, and

informally in Vietnam. These initial structures provided the foundations of inclusivity and collaborative processes that are seen in MCMs today.

Structures have allowed for One Health advocacy with departmental managers, creating a shared understanding across many organizations. The first 2013 MOU (Figure 5) in Thailand influenced the development of the OHCU, providing necessary boundaries for the inclusions of member organizations:

> Oh, it's very, very important because in order to get the policy support from your supervisor, you need that one, the agreement, the mutual understanding at the political level so then you can work in your sector. Then they can work together. I think this is very important. Otherwise, it's very tough when you have to work together or you go to the meeting, something that is not really understood from your supervisor, or your manager, it's very difficult [Th 7].

This highlights the way that initial structures, like an MOU, set the parameters for creating shared goals, and more so, provide a framework to help advocate work and garner support from high level leadership in member organizations. These structures influence the pathways that form within the network, either opening or closing collaborative junctures. It was the 2013 MOU in Thailand that supported the formal and 'binding' structure that made others feel included and know their role or responsibility. This initial MOU created a framework for collaboration that allowed both animal and environmental health to come to the table more frequently in the discussions that led to the OHCU development, effectively opening collaborative junctures. In fact, this MOU was later modified and adapted to support the inclusion of additional organizations–more

inter-organizational pathways and the potential of more collaborative junctures (Figure 6). One interviewee described the value of this initial MOU for inclusivity:

> So I think that the, the willingness of people to work together and the policies support and you need the One Health MOU and you have to specify role and responsibility for each organization so that they can explain their role, and there is more and more is the willingness [Th 7].

By comparing the policy field map from the original 2013 MOU (Figure 5), with the map from the updated 2016 MOU (figure 6), it is easy to see how a structural adaptation resulted in additional inter-organizational pathways and opportunities for new junctures. These junctures are then accessible to critical connectors in the network, and this confluence of structural adaptation and leader agency over time, gives rise to MCM structuration.

Figure 5: Policy Field Analysis and Mapping of Collaborative Pathways: OHCU 2013 MOU

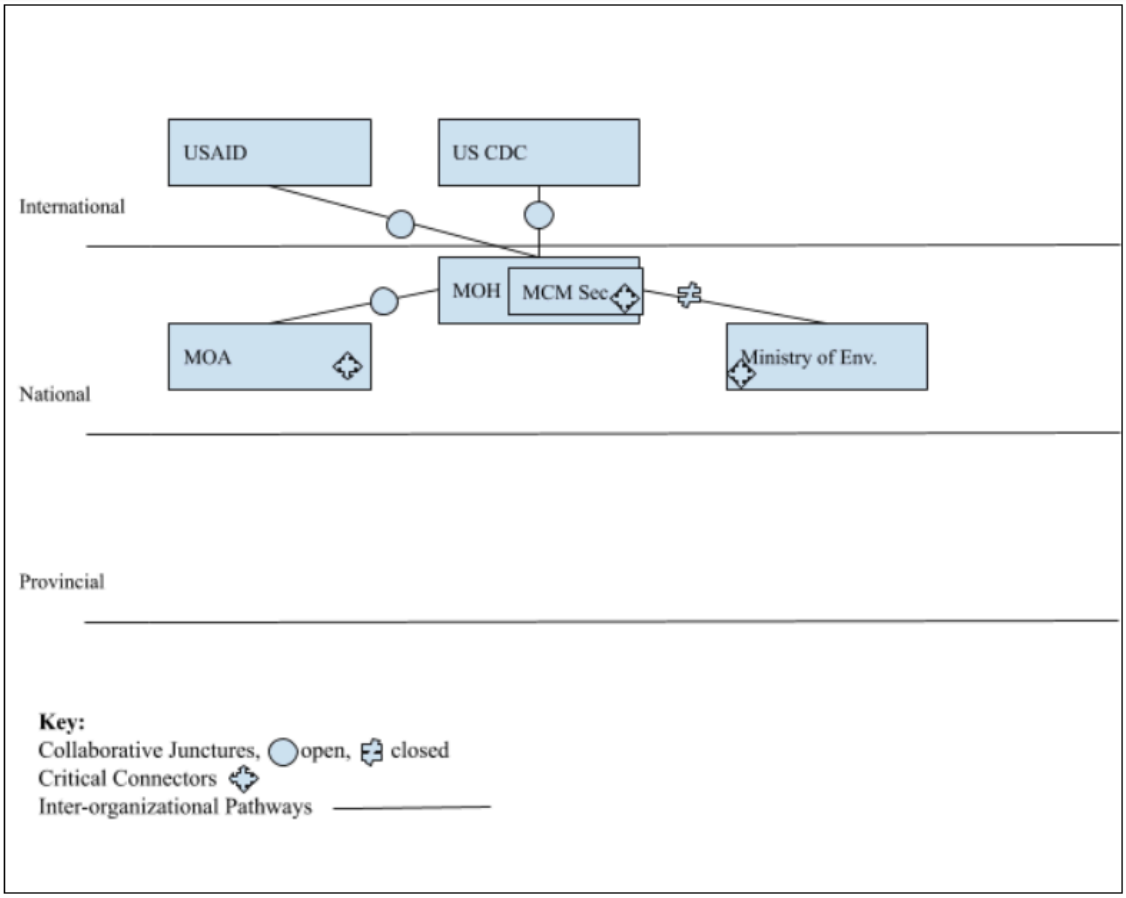
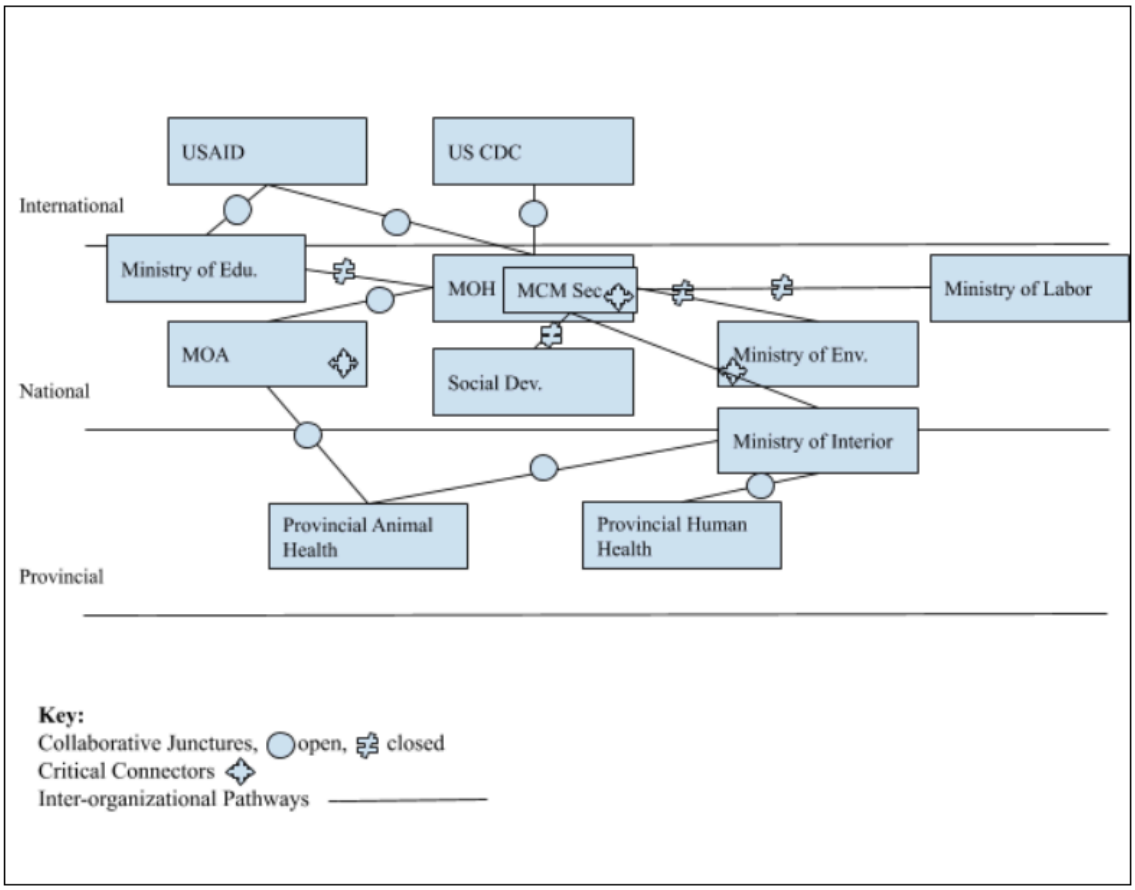


Figure 6: Policy Field Analysis and Mapping of Collaborative Pathways: OHCU 2016 MOU



Conversely, and as discussed in some detail in the Vietnam case study, the Circular 16 was developed at a technical level and was created between human and animal health sectors. This policy framework was consistently pointed to as an influence in the development of the OHP but may have inhibited the inclusion of other sectors. As discussed in Chapter 6, the circular also limited coordination and communication beyond the formally agreed to pathways laid out in the circular. This effectively closed collaborative junctures, creating barriers within informal inter-organizational pathways. When looking at the original OHP before the Circular was created (Figure 7), this map

can be compared to the application of the Circular 16 (Figure 8). In the comparison of these policy field maps, it is easy to see how junctures may be closed.

Figure 7: Policy Field Analysis and Mapping of Collaborative Pathways: OHP before the Circular 16

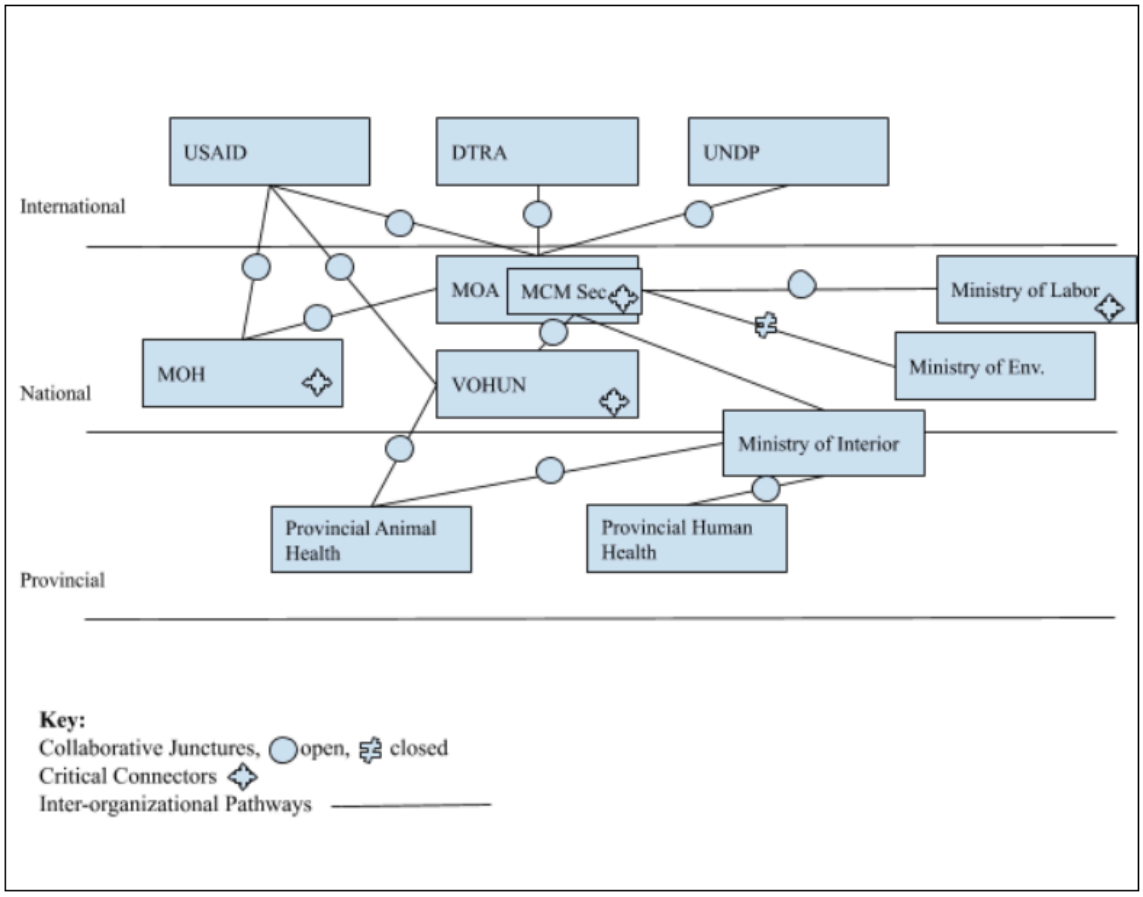
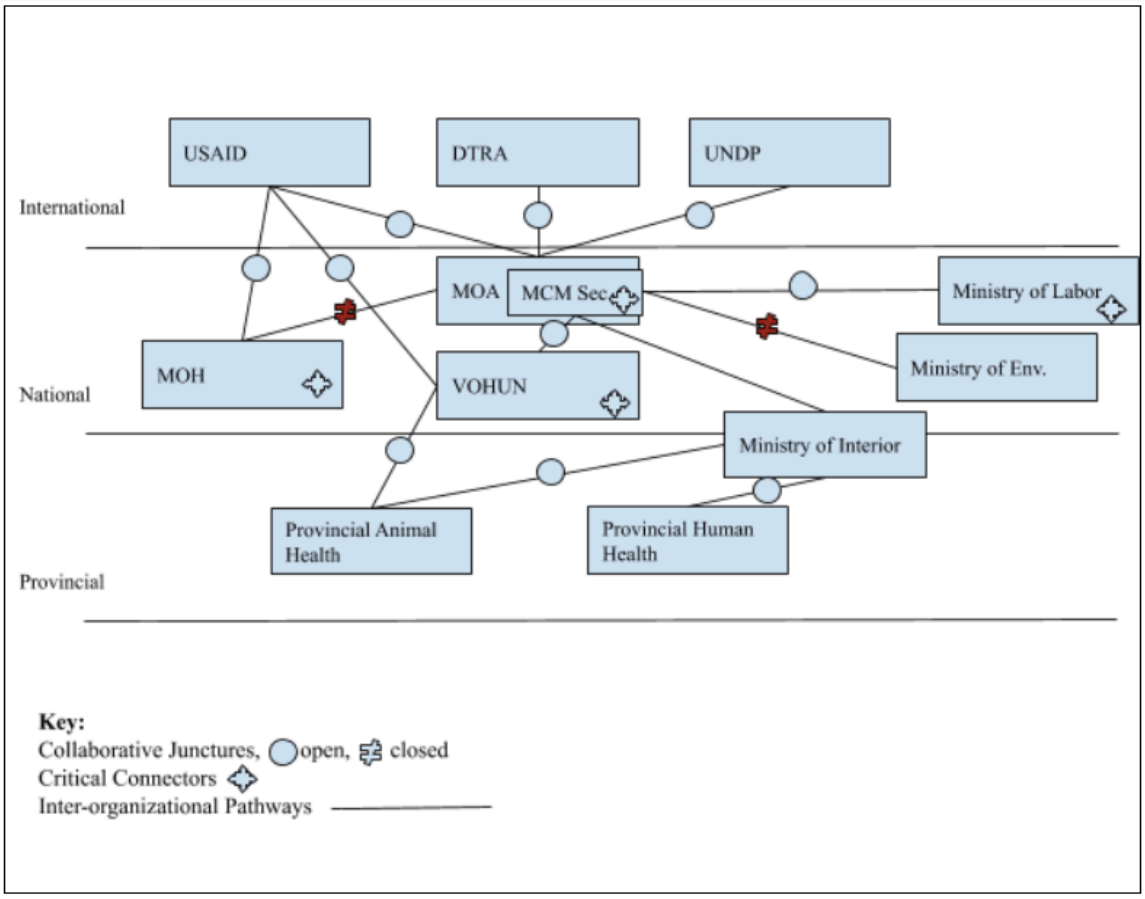


Figure 8: Policy Field Analysis and Mapping of Collaborative Pathways: OHP Circular 16



Other structures had similar effects on the operation of cross-boundary junctures. In Vietnam, the exogenous governance factor required that any international donor funding be distributed through the ICD, a neutral government platform. The ICD became an important structure that supported a mechanism for shared funding allocation:

> In Vietnam any project gets funding from an international donor who Ministries must be coordinating by the ICD. So any funding comes through the international cooperation and coordination is at the departmental level in the ministries. So that is why OHP is not an independent entity but they are under the ICD.

Do you think that because funding flows through ICD rather than one department or the other do you think that is beneficial?

Yes, some parts are very beneficial. For example, there is more coordination because it is easy to coordinate between the two departments in the two sectors. So if the money were to go directly to the technical department they only have money by themselves, difficult to invite another department from another ministry. ICD is kind of like a neutral unit. The neutral unit is ICD. And they are very close with the leader of Ministry. Every day they must be a report for the Minister of MARD, so that is easy for them to approach the leader [Vn 2].

Although the Circular 16, as an operational policy, caused unintended rigidity, the ICD actually countered, creating a surprising level of collaborative fluidity. The ICD became an important starting condition that contributed to a positive perception of the OHP among many partners. Partners reported feeling less concerned with the leadership or host unit of the OHP because they knew there was a mechanism for ensuring a multisectoral approach to funding shared activities. This existing donor-dependent structural component may actually support leaders to navigate the interdependence that exist between donor funding and member organizational contributions as discussed in Chapter 7. However, this also creates extreme challenges for the development of sustainable network structures.

In addition to foundational donor support and partnership, finding a process for transforming funding became very influential. For the OHP, a process for transformational funding, through the ICD, allowed for donor funding to be seen as collaborative rather than sector specific. This decreased the perception of favored

organizations and traditionally hierarchy and power dynamics. Despite the OHP Secretariat being based in MARD, this mechanism for transforming funding became an important aspect of collaboration. Although the OHCU did not have an initial mechanism for the transformation of funding, they actually created technical activities that allowed for this transformation. In addition, structures like the MOU in Thailand and the Circular 16 in Vietnam created a different sense of structural rigidity versus fluidity and in the end, this has influenced the way in which MCMs operate.

Transformational Funding

One of the most important factors that emerged during the process of MCM development and implementation was the ability to transform traditional sector-specific funding into funding that could be distributed among MCM members. Interviews in Thailand and Vietnam revealed that this 'transformation' of funding occurred for both the OHCU and OHP but was accomplished via two different implementation pathways: (1) administrative and (2) technical activities. In both scenarios, this transformational funding allowed for the opening of collaborative junctures and ultimately, collaborative emergence and structural adaptation.

In Vietnam, and somewhat by default, the OHP was supported by the ICD as a neutral funding platforms. As discussed above, this is an example of donor-dependent structuration that has resulted from the paradoxical tensions created during the start of collaboration. International donor funding required that funds be distributed to member organizations through the ICD and although donor-dependent, this was actually very positive. The ICD is one of the best examples of a structure that is formed between

interdependent and paradoxical starting conditions. Without donor funding and member organizational needs, you would not see the ICD as a neutral platform for collaboration.

Although a slightly different context, the historical involvement of some international donors in the OHP has allowed for a channel of funding that was perceived as multidisciplinary. Because Vietnam was a UN reform country, UNDP was involved in the starting conditions of the MCM more readily than in other MCMs. The rhetoric and inclusion of environment and climate sectors in the discussion of One Health allowed for a broader perception of how funding would be used, ultimately opening additional inter-organizational collaborative pathways with less obvious One Health partners. Although this wasn't an actual administrative pathway, this perception of inclusion was still important in the development of a neutral and 'transformational' platform for funding. One interviewee described UNDPs role:

> So there was this historical context where UNDP got involved in avian and human influenza in Vietnam… I suppose much more than in any other country… But some of our UNDP colleagues would point to One Health, Ecohealth, environmental health, connections. The idea that UNDP has quite a strong role on climate change globally, on sustainable development. The strong connections for example in Vietnam with both Ministry of Agriculture and Ministry of Natural Resources and Environment, working on things like climate change in particular and other energy and forestry and all sorts of things… But in reality, my personal opinion is that it is more about the historical context. UNDP can be quite neutral on the animal health/human health, I wouldn't say divided and in some ways it has

allowed for that neutral channeling rather than having to locate it [in one ministry] [Vn 9].

In both Thailand and Vietnam, interviewees commented on the need to transform funding. Thailand didn't have the same neutral platform as Vietnam, so they suggested that One Health needed to be written into sectoral plans. Although the funding was distributed to the host unit, and a department within the MOPH, it was fascinating to see that the OHCU actually established a mechanism for transforming funding through their choice of technical activity implementation. Funds received for technical work were used to develop a call for proposals. This allowed many organizations to work together and submit One Health proposals to the OHCU for funding. As a result, funding was distributed to multiple organizations without one department owning and managing all the projects. One interviewee in Thailand described how the OHCU activities support collaboration by distributing funds:

> Another thing that I mentioned is that if we have something to work together that's how the network or link is to be and that link is going to be actually good. So giving people something to work on together. So for example every year the OHCU invites proposals. So when I said that we need to have something that is quite common to us to work on as a network. So if you have something that interests the MOPH maybe not the MOEd, well maybe the education is going to step down. And by that I think that the leader of the OHCU asks me if there is anything they can do better. If they can find funding source to maintain the activities to keep this network alive [Th 5].

Another interviewee talked about how far the OHCU has come and that their ability to distribute funds has actually attracted a lot of attention, and interest in the OHCU, supporting a sustainability plan for the MCM:

> I think for now if we think of an MCM in Thailand, people think of the OHCU, which I mean I think it's pretty well functioned, pretty well organized now even though they don't have a lot of staff but they are effective and you can see from the number of projects applying for funding. So from last year it was pretty limited to the government agencies, but this year it went out and people from universities applied too and I think they got a list of 20 projects or something which was a lot and they were able to fund only five [Th 4].

This approach to technical activity implementation provided a platform for engagement and distribution of funds, thereby transforming a sector-specific appropriations model into an inclusive One Health funding model. During my interviews, I was consistently struck with the challenges inherent in establishing a collaborative funding mechanism. Government organizations, through their own policy development and implementation, are designed to fund specific program objectives at the service of their organization. As a result, it is nearly impossible to allocate funding to support external collaborations that cannot be tied back to a specific program line. This challenge was then amplified in the face of low resourced organizations. One interviewee in Thailand described this challenge accurately as the need for collaborative and transformational funding extends to the subnational level:

> You need technical action plans and policies, but these do not get effectively mobilized, especially at the provincial level, unless you have a mechanism for

> funding. Provincial levels are usually under resourced and do not have the capacity to implement [Th 7].

One Health funding will remain one of the largest challenges as the OHCU and OHP face questions of sustainability in the face of diminished donor funding. Both MCMs have benefitted from using some form of mechanisms, administrative (ICD, UNDP), or technical (OHCU granting program), to transform traditional sector-designated funding into something that is viewed by all parties as multisectoral and accessible. These mechanisms, by starting condition design in Vietnam, or by adaptation, consensus and process in Thailand, will need to be modified as MCMs look for either government funding for the OHP, or government and foundation-led support in the case of the OHCU.

Critical Connectors

Throughout the interviews in both Thailand and Vietnam, interviewees continually referred to individual actors who were 'critical' or 'instrumental' to the development of the MCMs. A common term for these influential people is 'One Health Champion.' It became quickly apparent that although involved in advocacy, many of these individuals, namely the MCM managers and key members, were actually 'connectors,' that shaped the development of MCMs and the involvement of other member organizations, thereby operating or rather, opening or closing, critical collaborative junctures that existed within interorganizational pathways. As illustrated with policy field mapping in Figures 5-8, this connects directly back to MCM leaders and their ability to support critical connectors to sustain these important relationships, thereby encouraging more fluid junctures within the network. When reflecting on Figure 4, and the transfer of tensions needed to support

donors to reduce or remove funding, it became apparent that support for critical connectors could help with structural adaptation and redistribution of tensions over time.

We'll look first at the most frequently cited critical connector: the MCM Manager. In nearly every interview in both Thailand and Vietnam, each interviewee described the important role of the MCM Manager. These managers were considered integral in the development of both MCMs. In Thailand, the MCM Manager was described as being instrumental for the engagement of other members:

> *So the steering committee members and you know those within the OHCU. Are people very engaged?*
>
> Yes. And I think particularly because they have a good manager now. She is well connected. So I think that has to be helpful… And like this, during my time here, just about a year, less than a year and a half, I see more trust from the stakeholders in the OHCU.
>
> *Has that been in the time since the Manager has been there?*
>
> Yes. I mean the trust that I talked about is um, like the trust for the OHCU to be the One Health convener of the country. Yeah. Not, not in a way that they don't trust the unit, you know, and so is uh, or, or I think they, uh, the OHCU has gained more importance over the years. Uh, because before this we have not seen any other funding sources coming to them, but right now we see that people approaching them asking if they could help, you know, facilitate the activities, facilitate some kind of One Health services. So I think that's quite significant.

The Managers were seen to be these critical connectors who influenced relationships and ultimately trust. External partners began to interact more readily with the OHCU and

eventually they started showing interest in being involved in the activities. These critical connectors actually expanded and shaped the boundaries of collaboration beyond the original scope and intent. There may be an opportunity for critical connectors to support leaders to reach beyond, or potentially adapt, the use of structures for more inclusive collaboration.

However, Manager positions are not government positions, and this has led to a high turnover rate in the OHCU. In the case of the OHCU, this was actually described as being very positive because it allowed for network expansion. Former managers created new inter-organizational or inter-departmental pathways, allowing for additional collaborative junctures. Because the managers have been such critical connectors, when they took government positions they actually helped to share their One Health connections, broadening the network:

> So actually I think that the way they operate has not changed. The coordinator is not a permanent position, and there is this type or turnover for the coordinator. I think we have had three of them now. I think the first and the second one at the end, they were recorded as the government officers. So they got the permanent position. So they move on. Okay. The second one moved to the health policy and planning and work closely with the antimicrobial resistant group. And the third one is still here. So that's, I think that's challenging but in general, because I think we get very, very good coordinators. So actually the projects is going on and you know, it's, it's a very good, I think it's very effective.

It's interesting though because having those coordinators be in the position and then they transferred to a permanent position, it sort of creates this avenue for sustainable relationships?

Also they are very good... So even though they relocate and they become like a government officer, one at the MOPH, one at the DLD. But I think this is like a, you know, you're growing seeds right. And they grow up and expand? Yeah, exactly. You need to get that original seed grow and expand also [Th 7].

These managers were described as growing seeds, or pathways, into new organizations that benefitted the MCM. This once again points to the value in interdependent starting conditions for MCM structuration. The paradoxical tensions between donors and member organizations resulted in a unique expansion of the MCM network and embedding these One Health managers, or seeds, into many other departments.

Some additional MCM members were described as being extremely influential through their engagement of other MCM member organizations, particularly those who are less involved. One interviewee from a partner organization that is not on the OHCU Steering Committee described their approach to working with member organizations who are typically less involved:

I think that I would give the talks in many conferences for example, PMAC, when we talk about how to establish the MCM, or how to engage the government. I think that first step if you don't have the opportunity to work with them yet you have to find the opportunity to work with them and show them how you can serve them something. So in any network, first thing not only the network but you are looking for someone that is very helpful for you and serve some job for you. If

> you come from Thailand OHCU then say that. We don't want to keep you any more out of the loop. First thing, just do your job and show the government just what you can serve for them. And then when you work with them, and then when you do your job, they will engage, they will support you more. Another step is when you already work with them, I think that another important thing is to keep communication. Not just work, some people work very well but don't just talk but communicate. Another thing that I mentioned is that if we have something to work together that's how the network or link is to be and that link is going to be actually good [Th 5].

In this case, the interviewee describes the OHCU as a very inclusive environment and talks about the importance of service to one another as members. They view the OHCU as a partnership in which everyone is giving and taking.

These critical connectors began to appear repeatedly in interviews, and interestingly, they were not always a part of the steering committee or even the operating Secretariat of the MCMs. They described their role in affiliate One Health projects, often donor funded, and talked of how important One Health was to their work and to the work of the MCM. It became apparent that they truly believed in One Health and it aligned with their own values and initiatives. This came through clearly with one critical connector from the USAID EPT2 One Health Workforce project:

> Yes what happened if we weren't here and during the first lecture they ask “why do we have to be here?” ministry of labor/ministry of education ask why they have to be here to set up the One Health competency. You know before I started

> developing the competency framework I said, “Stop and I will keep you up to date and ask me and I will answer one by one each ministry.” [Th 5].

It was during this interview that I was struck with the power of these critical connectors within the networks. While they may not have been in a position of influence on the steering committee or even the secretariat, they were incredibly powerful in the way they used their agency to navigate the network. Whether within the network or related through mutual donor projects, critical connectors had profound influence on the collaborative emergence and adaptation of the network, shaping the development of MCMs. Critical connectors shaped the system beyond traditional leadership and management structures, possibly as a result of an alignment of personal values with the goals of One Health. When supported, as was the case in THOHUN, the critical connector could actually turn on, or open, the junctures within inter-organizational pathway for less interested or less involved organizations. In a way, they supported key partner’s engagement, creating process-based paradoxical tensions that strengthen member organizational engagement and ultimately re-shaped and adapted network structures.

Given this vital role in MCM development and sustainability, critical connectors need continued support from MCM leaders. As critical connectors navigate the network to play new or modified One Health roles (e.g. MCM Managers who moved to permanent government positions), or in their current positions (donor funded academic projects like USAID One Health Workforce), they need the support of their new supervisors, or at the very least, the continued support of the MCM leaders to keep engaging. The connectors extended the network, raising awareness and creating value and trust, particularly among skeptical organizations. These critical connectors, when appropriately supported by

MCM Leaders, may be a link to sustaining and adapting paradoxical tensions during the process of MCM development. Perhaps this is the key to moving beyond donor-interdependent tensions at the start of collaborations for network sustainability.

Leaders have agency to operate collaborative junctures to shift paradoxical tensions over time.

Pulling all the pieces together from chapter 7 and chapter 8, **Figure 4** constructs the way in which paradoxical tensions can shift and adapt from the start of collaboration to the process of collaboration, while **Figures 5-8** allows for the visualization of collaborative inter-organizational pathways and junctures across many levels. It is possible that leaders, with the support for critical connectors in their network can support this shift in tensions through their strategic decision making. Because the starting conditions are so dependent on few tensions, it is important that leaders support critical connectors to re-distribute the tension to additional interdependencies within the network. Let's look at an example of this in practice.

In the case of the OHCU, critical connectors supported the involvement of new member organizations as well as the redistributed of their influence in the network (e.g. managers moving positions in government) beyond the original paradoxical tensions as the start of collaboration. In addition, they created a transformational funding model that was not solely dependent on the original starting condition of donor funding. This allowed for the tension that was held by the donor, to transfer to other tensions that were redistributed and expanded during the process of collaboration. The expansion of the 2016 MOU and the creation of the RFP allowed for traditional donor tensions to be redistributed throughout the network. This structural adaptation created a greater

likelihood of sustainability beyond the interdependent starting conditions of donor influence and member organizational capacity. Conversely, in Vietnam, the tensions remain firmly dependent on the paradoxical tensions at the start of collaboration. This is because the government was unwilling to see the Circular 16 adapted. In addition, the Manager position did not result in turnover and the transformational funding model, via the ICD, is completely dependent on donor funding. In addition, OHP leadership is focused around partnership while not engaged in a service partnership to one another through joint technical activities. For all of these reasons, the paradoxical tensions at the start of collaboration have remained rigid during the process. This severely hinders the likelihood that the OHP will be sustained beyond donor funding.

In mapping the collaborative junctures for MCMs (**Figure 5-8**), and then understanding the necessary transfer of paradoxical structural tensions in the face of reduced donor funding (**Figure 4**), we can begin to see the opportunity that exists for leaders to influence this process. If MCM leaders could visualize the paradoxical tensions at the start of collaboration, while also understanding the collaborative pathways and junctures that are available to support the transfer of tensions in process over time, then they may be able to use this information to more effectively, or proactively, operate these junctures toward sustainable structures. For example, if a simple policy field mapping could indicate where critical connectors are located, and which junctures are open or closed, leaders could use this information to support management and decision making. There are three places where this type of proactive leadership and management could be supportive: (1) adaptation of boundary spanning policies and frameworks, (2) support for

the critical connectors, and (3) transformational funding that is reflective of organizational capacity, including contributions and resourcing.

First, as seen with the OHCU, the ability to create flexible policies and then expand this when necessary, resulted in an extremely inclusive and supportive MOU in 2016. This modification and expansion of the MOU allowed for a redistribution of interdependent tensions across the network. Although the MOU was influenced by the donor in both 2013 and 2016, the expansion and the inherent flexibility of the policy allowed for additional partners to create some of the tensions necessary for network sustainability as the donor begins to reduce resources toward sustainability.

The critical connectors also supported this redistribution of tensions. Organizational leaders need to support the work of critical connectors through time, trust and interdependence to do their best work. In addition, this may mean that MCM leaders proactively work to develop and document the critical connector's roles and responsibilities, including which relationships they are best placed to maintain and sustain over time, particularly in the face of a reduced interdependent starting condition like donor funding. This could also extend to the role of MCM leaders, ultimately, safeguarding the network from unforeseen organizational changes and position vacancies.

Additionally, the disparity in organizational resources and the flooding of donor resources runs the risk of creating a false pooling of resources and a false commitment to the MCM at the start of collaboration. As donor funds decrease, this creates a vacuum. There may be an opportunity for policy field mapping to better pair organizations with appropriate roles and resource contributions for MCM sustainability. This would allow member organizations to partake in "collaborative choice" at the outset of collaboration

and may support the diversification of resource contributions and negotiated incentives as donor funding is decreased.

In summary, endogenous starting conditions and interdependence create paradoxical tensions that give rise to network structures. MCM leaders, with the appropriate foresight and applied tools, may be able to support improved decision making and the transfer or redistribution of interdependent tensions as donor funding is reduced. However, these leaders face many barriers. If donors and MCM leaders can work together to support the transfer of tensions over time, we may see greater viability of these important networks.

Chapter 9: Summary of conclusions

Overview

This dissertation explored the structures at the start and during the processes collaboration that have influenced the development of national MCMs in Thailand and Vietnam. The development of the OHCU and OHP are emergent and represent empirically rich cases of collaborative governance. The interpretive methods used in this research provided an understanding of how MCMs are formed and the role of structures in creating collaborative boundaries, or junctures, that influence network sustainability beyond donor funding. Previous literature on structuration and theory of fields, paradoxical tensions, cross-boundary collaboration, collaborative adaptation and emergence, and my personal experience working with MCMs, informed the design, implementation and analysis of this study. The concepts of starting conditions and process of collaboration, as well as paradoxical tensions and structural adaptation, shaped the analysis of results and informed final discussion and conclusions. This work has provided information for both theoretical and practical contributions and has supported areas for further research.

Summary of Findings

An interpretive analysis of interview transcripts, OH-APP reporting and field notes from the researcher's working experience with both MCMs allowed for a truly interpretive approach. Through many layers of coding, emergent themes were identified and were used to inform the primary research questions posed at the beginning of this study. The results were presented in four chapters. The full case studies were outlined in chapters 5 and 6 for OHCU and OHP respectively. Each case detailed the emergence of MCMs

uncovering (1) the historical context that supported their development, (2) their organizational and operational structures–the legal and procedural mandates, the culture of governance and existing policies, funding, leadership, technical function, Secretariat and management, and (3) the future of each MCM and the challenges they will face in becoming sustainable networks. Looking across both cases, chapter 7 explored the systems factors that influenced structuration. The endogenous factors, namely the influence of international donors and the capacity of MCM member organizations, were determined to be interdependent starting conditions for MCM development. This interdependence created paradoxical tensions at the start of collaboration that influenced MCM structuration, and in the face of exogenous factors, this created challenges and opportunities for the development of sustainable network structures during the process of MCM development. In chapter 8, it was observed that MCM leaders, if aware, may be able to manage tensions at the start of collaboration to redistribute tensions across member organizations through the influence of critical connectors and by supporting transformational funding models and an emphasis on service-oriented technical activities that support member organizational engagement. By mapping the policy field and related inter-organizational pathways, leaders may be able to visualize the boundaries of the network and support critical connectors to maintain important collaborative junctures for network expansion and the development of sustainable structures. Through this research, I have offered both practical and theoretical contributions to the scholarship of collaborative governance, providing insights into the factors that influence network structuration and how this impacts the rigidity and flexibility of collaborative junctures for the development of sustainable network structures over time.

When considering the first research question and trying to understand how MCMs are established and institutionalized within national governments, it became apparent that the starting conditions created boundaries for collaboration that shaped nearly every following action. Most notably, the influence of international donors and the organizational capacity of member organizations created the endogenous foundations from which the MCMs developed. Donor influence and member organizational capacity created paradoxical tensions that influenced MCM structures, and in the face of exogenous factors, the choices of leaders created challenges and opportunities for sustainable network structuration in the face of decreasing donor funding.

As MCMs developed into operational networks, a number of process-based factors influenced their function. Without question, the continued involvement of international donors in network operations and the collaborative process of network development was the most influential factor on how MCMs evolved. Inter-organizational pathways and junctures were formed. Through the work of MCM leaders, managers, and critical connectors, structures were either solidified or adapted over time, and junctures were opened and closed. It became clear that the donor influenced starting conditions and resulting tensions were easily reinforced during the process of MCM development. In effect, network operations ran a serious risk of becoming dependent on donor influenced structures that were often created, either by choice or by necessity, outside the bounds of national government structures. For example, in both the OHCU and OHP, network management which included the MCM Manager position and the supporting Secretariat staff, have remained dependent on donor funded positions that sit outside government ministries and departments. This external government structure, or tension, was created at

the start of MCM collaborative development, but over time, this structural component was reinforced. In other instances, a starting condition such as donor funding in Thailand, was adapted through the creation of an RFP process to transform funding for broad engagement across the MCM. These are small examples of how the cases illustrated structural rigidity versus adaptability over time. A final look at each case can help illustrate this point:

In Thailand, donor influence, as an interdependent starting condition, created a notable and necessary tension to support initial network structuration. However, over time, this tension was redistributed. First, policies and frameworks such as the 2013 MOU were flexibly adapted and expanded in 2016. This allowed more member organizations to be involved and to contribute. In addition, a donor-dependent high turnover rate in the OHCU Manager position allowed for critical connectors to be redistributed through the network, expanding inter-organizational pathways and creating new collaborative junctures that could be sustained as donor influence decreased. Finally, the OHCU created a transformational and transparent funding mechanism supported by an RFP. This allowed many member organizations to collaborate and participate in MCM technical activities, creating shared buy-in and sustained interest.

Conversely, in Vietnam, the Circular 16 created structural rigidity that caused collaborative inertia and frustration, institutionalizing more formal communications and inhibiting informal communications. The OHP was also created as a partnership model rather than a technical committee and as a result, member organizations were less engaged through service-oriented activity and more engaged through dialogue. This limited the level of engagement of member organizations. In addition, the culture of

governance inhibited changes in leadership models and did not support redistribution of critical connectors in the network. Although Vietnam had more organizational members than Thailand at the start of collaboration, Vietnam saw fewer national inter-organizational pathways develop during the process. Finally, the ICD, a transformational funding mechanism, was a donor-dependent starting condition and was not adapted over time, remaining a critical donor-interdependent network structure.

In a brief review of these cases, the factors that influenced the process of MCM development can be summarized and these include the policies that set the framework for formal collaboration, the ability for MCMs to create and sustain a transformational funding model, and the critical connectors who navigated collaborative pathways and junctures. These factors influenced the networks ability for expansion and sustainability. The initial policies–the MOUs in Thailand and the Circular 16 in Vietnam–framed the boundaries of collaboration. These boundaries supported the development of collaborative inter-organizational pathways and ultimately, junctures, between member organizations. The critical connectors, usually the MCM Managers or key One Health champions in partner organizations, had the ability to reach across organizational boundaries and operate collaborative junctures. In fact, a presumed negative outcome of MCM development and donor funding–the high turnover rate of MCM managers in the external government OHCU positions–actually allowed for critical connectors to create new bridges once they were established within their more permanent government funded positions in various ministerial departments.

However, existing organizational capacity and their subsequent vulnerability to change, created many challenges for network development and sustainability. Under

resourced organizations just didn't have the capacity, and in some cases, the incentive to participate. As a result, collaborative leadership models were difficult to actualize. In fact, the organizational burden of the host unit meant that there were very few organizations who could lead the unit, and this wasn't actually a reported source of resentment. Organizational capacity allowed for a general level of support for the MOPH in Thailand and the MOH in Vietnam to take on a major role in either leadership or resource support. In some ways, this challenges the common perception that One Health needs to be based on an equality of participation. It was surprising to see that many organizations with fewer resources were supportive of current leadership models and ongoing support from MOPH and MOH. In most instances they preferred that leadership was deferred to an organization who could support.

The development of both MCMs resulted in access to transformational funding models. In Vietnam this arose as a result of donor funding at the start of collaboration. The ICD served as a neutral platform for the distribution of funds. This starting condition allowed for all OHP member organizations to access and ultimately, trust, that donor funds were being used collaboratively even with the OHP Secretariat hosted in MARD. It was fascinating to see that over time, the OHCU arrived at a transformational funding model as well. The OHCU developed this as a process of collaboration by developing a technical model for funding transformation through the development of an RFP. This RFP allowed many organizations in the network to propose ideas and to apply for funding. This was reported to increase trust, transparency and inclusion in the network. The OHCU reported an increase in applications and further, an interest from diverse donors in supporting their work.

Both OHCU and OHP have received a level of maturity that has donors pressing for network sustainability and a transfer to government support. However, as discussed previously, the donor supported structures have frequently been reinforced. The positions for MCM Managers and Secretariat staff have been created outside of government departments and positions. Both MCMs will face considerable challenges in adapting, or in some cases, formulating entirely new structures that allow the same level of collaboration. For example, traditionally funded government positions are difficult to create and even more difficult to establish if one ministry will be required to allocate or manage funds that ultimately support many other ministries. Although collaborative and interdisciplinary processes are normative, they are heavily influenced by interdependent starting conditions. The OHCU may have more luck with this given that they have created a transformational funding mechanism within their network that is not dependent solely on donor funding. However, in the case of the OHP, the use of the ICD as a transformational funding model is entirely dependent on donor resources. The donor designed structural tensions at the beginning of collaboration have been reinforced in the process. MCMs will need to significantly adapt or establish new structures that will challenge their current operations.

The second research question examines how structures framed the boundaries of collaboration and how those structures were adapted in process, either supporting or challenging efforts toward the development of sustained networks. As discussed above, the starting conditions have influenced the structures as they were adopted and adapted during the MCM development process. In addition to the donor-led organizational structures (e.g. ICD, funding structures for Secretariat and Manager positions, etc.),

policy structures have also impacted MCM development and discussions of sustainability. The OHCU benefitted from the 2013 MOU which was adapted to be broader, more inclusive and more flexible in 2016. Similarly in Vietnam, the network was influenced by the Circular 16. These two policies framed the process of MCM collaboration. In the case of Thailand, the MOU was consistently reported to support collaboration, leading to fluidity of collaborative junctures, and in some cases, sustained inter-organizational pathways. The MOU was generally viewed as positive and necessary for collaborative efforts. However, in Vietnam, the Circular 16 was developed at a technical level and detailed how MOH and MARD would collaborate in the event of zoonotic disease. This structural policy was reported as being extremely detailed and actually inhibited collaboration. As a result, an evaluation showed that the Circular 16 was not supportive and when the Prime Minister was asked to endorse the OHP he refused, citing the Circular 16 as one of the problems. Unfortunately in Vietnam, the culture of governance is one in which there are few windows for policy change and this Circular would not be revisited. The policy challenge actually closed collaborative junctures.

Because MCMs are being so heavily supported as a result of global health security rhetoric and funding around the globe, this research was also intended to explore best practices and challenges in MCM development. In a cross analysis of both cases the MCMs were similarly supported by three primary factors: (1) MCM leader support for critical connectors, (2) access or ability to establish transformational funding channels, and (3) donor support for advocacy and high-level engagement. These factors supported new and sustained inter-organizational pathways that expanded the reach of the MCMs.

Critical connectors now included within the MCM networks became catalysts for One Health, creating collaborative junctures within pathways that didn't previously exist. Similarly, access to, or the creation of transformational funding pathways supported an environment of trust in host organizations and led to all member organizations feeling that they had access to resources for collaboration.

Finally, this research also addresses how individuals, particularly MCM leaders, navigate the network to influence network structuration. The level and consistency of donor funding, despite the transfer of tension necessary for sustainable structuration, was extremely important for One Health awareness and leadership support for collaborative efforts. However, the MCM leaders played important roles in managing the inherent tensions that impacted MCM structures. This included decisions regarding the use and influence of donor funding, the capacity and role of member organizations and also whether critical connectors in the network were fully supported to open collaborative junctures. This created opportunities to adapt MCM structures toward sustainability.

In summary, interdependent starting conditions need strategic support via leaders and critical connectors to be transferred and adapted into sustainable network structures during the process of MCM development. If leaders are empowered to view the MCM as a dynamic structuration process that requires balancing and transferring tensions, they may be better placed to provide key support. However, these leaders face considerable challenges, including shifting government positions and organizational structures, vacancies and retirements that create barriers to informed and supportive leaders throughout the process of MCM starting conditions and process-based development. Perhaps policy field mapping can support leaders to better support critical connectors to

maintain inter-organizational pathways that are imperative for the transfer and re-distribution of structural tensions. These tensions can be redistributed in three primary ways: (1) via adapted and flexible policies that are inclusive of new member organizations, (2) through transformational funding mechanisms that are not donor-dependent, and (3) by supporting critical connectors to maintain fluid collaborative junctures that distribute network tensions over time.

Areas for Further Research

This research has allowed for the collection of a great deal of data that will support additional interpretivist and positivist research in further exploring the paradoxical tensions that influence structuration toward network sustainability. With a framework for MCM structuration in mind, there is a need to explore in further depth how individual actors navigate these structures, using their agency to influence structural development over time. Future work may include an exploration into the role of MCM leaders and the leadership and management choices that have influenced the structural development of MCMs in over 16 GHSA supported MCMs in Africa and Asia. Specifically, questions could explore the ways in which MCM leaders have managed endogenous polarities toward sustainable structures. How do their choices influence the transfer of donor-interdependent starting conditions during the process of MCM development? This overarching question could be broken down into any number of more granular questions, including how donors can mitigate creating a false pooling of collaborative resources leading to unintentional dependence on donor created structures at the start of collaboration? How often are donor-led starting conditions reinforced and sustained over

time? Do donor-interdependent starting conditions have less structural adaptability than other starting conditions?

Building on these questions, research could explore the role of individual actors. Although socially skilled actors have long been recognized in the literature, little has been done to look at how the actors, or their positions, can be supported structurally over time. For more practice-oriented research, we could investigate how policy field and pathway mapping supports leaders to more carefully and thoughtfully influence the structuration of MCMs to support important pathways? How could understanding an individual's influence on collaborative junctures within the field allow us to setup networks with more efficient flow through the multisectoral system?

Concluding Statement

This research offers both practical and theoretical contributions to the scholarship of collaborative governance, providing insights into the factors that influence network structuration and how this impacts the rigidity and flexibility of collaborative junctures. Specifically, this research points to the inherent paradoxical tensions that exists between donor support for MCM development and member organizational capacity to participate and sustain MCMs within national governments. The research provides preliminary context for how MCM leaders might approach the management of these polarities, at both the start and during the process of MCM development, toward long-term donor-independent sustainability. In addition, the research explores the role of critical connectors in creating and sustaining collaborative junctures. Ultimately these critical connectors may hold the "keys" to operating collaborative junctures overtime and supporting a redistribution of donor-interdependent tensions over time. This provides

insights as to how MCM leaders can support critical connectors through improved management and access to vital resources such as time, money and interdependence.

Ultimately, the last two decades have seen an unprecedented shift in rhetoric around global health security and the need for multisectoral, One Health efforts. As this research is concluded, it has provided many pathways for further research that can support collaborative network structures for One Health and beyond. To conclude this dissertation research, we can look to one interviewee's excellent summation of the changes they have observed in their 30 years in the global health field:

> If the leadership gets it, you're already halfway there. How to get the leadership to get it is a real challenge. But you know, I guess the positive side look, compared to five or 10 years ago, we've got all these countries. I mean, my goodness, Zimbabwe gave a great presentation on a One Health approach to anthrax. Who would've expected Zimbabwe to be able to really lay out this is our One Health challenges and with how we are dealing with it. I mean Indonesia, Cambodians were asking Indonesians questions about, are you dealing with, you know, bite case management for Rabies [Vn 9].

The influence of donors and the collective effort of multiple national organizations from around the world have created collaborative advantage for the process that are used to create health security. Together, the world is safer and more secure from emerging infectious diseases. It is a hope that this exploratory dissertation research may lead to more research that can help all of us navigate the complexity of collaborative networks to achieve intended outputs and outcomes for a world safe and secure from infectious diseases.

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Appendices

Appendix 1: Interview Protocol

Recruitment Script (optional):

Thank you for taking the time today to talk to me. I am conducting interviews to understand how policies support government organized cross-sectoral/ disciplinary work, often referred to as One Health.

Your input will help me understand what supports or inhibits your ability to collaborate around One Health issues. As you can see, I have a recorder here. I am recording the session because I don't want to miss any of your comments. I will keep what you say confidential and your name will not be in my final work.

Time expectation: The interview is 8 questions and designed to take between 30-60 minutes.

Interviewees: Participants in the OH-SMART workshop will be selected as representatives with key information and/or decision making authority for One Health issues. At least one representative will be interviewed from traditional human, animal and environmental health ministries in each country.

For the following questions, please consider your current position/ professional experience		
#	**Interview Questions**	**Research Questions**
1.	What organization do you work for? How does your organization contribute/participate within the national MCM (use specific term for each case)? Is participation voluntary or mandated?	How are national MCMs established and what structures or features are used to frame the boundaries of collaboration?
2.	Can you tell me a little about the history of the National MCM? How and when was the MCM established? Is there a leadership or governance structure? How is the MCM funded? Are there any documents I can reference to better understand how the MCM is structured/ supported/ operated, and which institutions are involved?	
3.	Can you give an example of how the MCM is mobilized to support One Health challenges? Is there a lead agency? How are member institutions engaged? What constitutes a One Health challenge for the MCM? 1. What supports member institutional involvement? Sometimes there are MoUs,	How are structures used to establish organizational hierarchy and/or power?

	policies, or other kinds of tools or structures to organize how the participants work together. 2. What challenges member institution participation?	How do actors/institutions navigate the networks to coordinate action and achieve intended outputs? What challenges do they encounter? What best practices are reported?
4.	Can you describe how you or a colleague were involved in One Health as part of the MCM? What supported this engagement? What challenged this engagement?	How do actors/institutions navigate the networks to coordinate action and achieve intended outputs? What challenges do they encounter? What best practices are reported?
4.	In your opinion, how has the MCM influenced One Health relationships (individuals or institutions?) positively or negatively?	How are structures used to establish organizational

		hierarchy and/or power?
5.	Since the MCM was established, have there been any new policies or protocols established to support operations? Can you describe how these came to be implemented and how this influenced the work of the MCM?	How are structures used to establish organizational hierarchy and/or power?
6.	How have MCM operations changed over time? Can you given an example of how MCM operations have changed, and what influenced that change? In your opinion was this a positive or negative change?	How does collaboration across MCMs influence adaptation and iterative improvement?
7.	Is there any hierarchy in the unit?	
8.	As you know, many countries are looking to establish MCMs, if you could give them advice to support improved One Health responses, what would it be?	How do actors/institutions navigate the networks to coordinate action and achieve intended outputs? What challenges do they

		encounter? What best practices are reported?