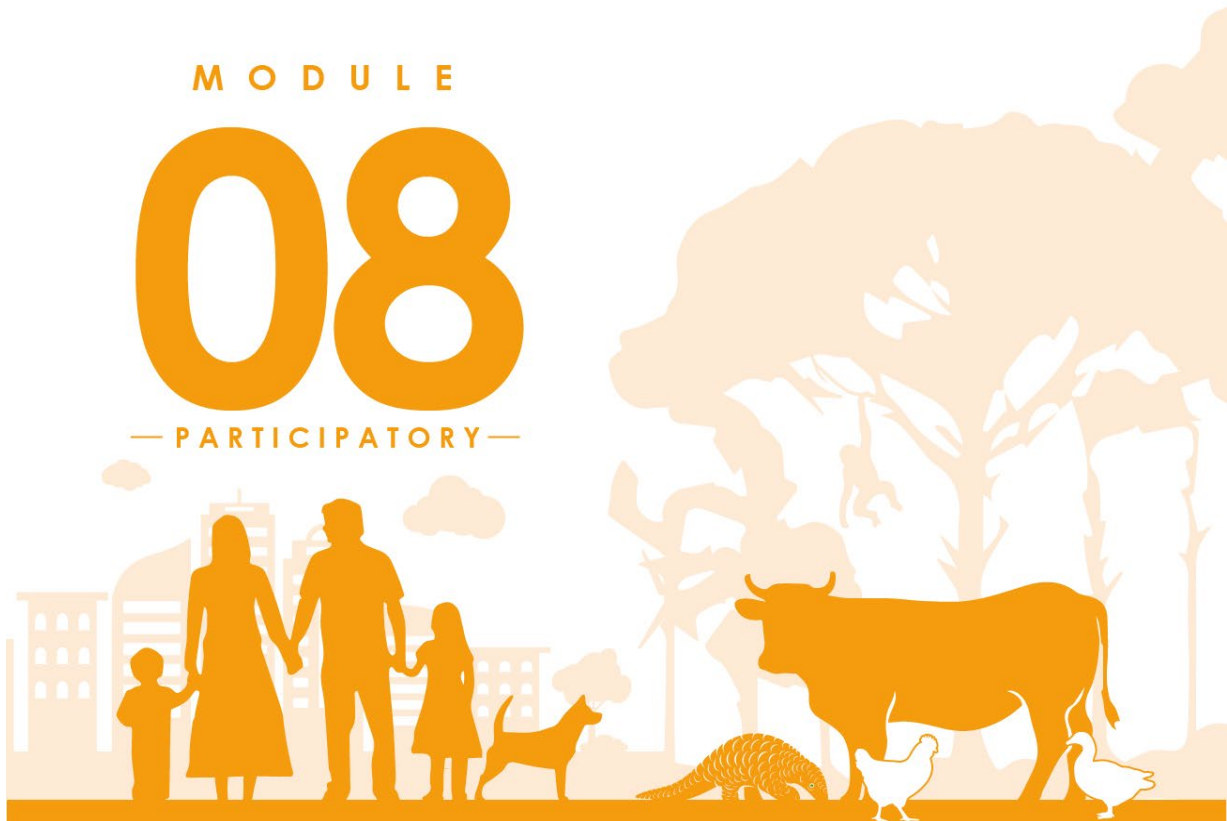MODULE

08

— PARTICIPATORY —

HOW TO USE THIS GUIDANCE

Applying Participatory Methodologies to Countering Zoonotic Spillover

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How to Use this Guidance:
Applying Participatory Methodologies to Countering Zoonotic Spillover

INTRODUCTION

Guideline development can be considered complete, not when it is published, but when the intended actors implement it. Our ultimate vision of *implementation* is when the contents, strategies, and recommendations in the previous modules are taken up by diverse actors (e.g., researchers, practitioners, and policymakers) for purposes that inform current and future practices and policies. More importantly, the process of implementation should be *participatory*, such that there should be genuine engagement of diverse actors across all points of implementation. A *participatory approach to implementation* will not only ensure a more holistic and contextualized implementation but can pave the way to better ownership, salience, and legitimacy of the process, outputs, and outcomes of implementation. Guided by this, Module 8 outlines some of the key components of the implementation process, including the cultural, social, economic, political, and environmental contexts, the characteristics of the people involved, as well as the guidebook itself. In writing this module, we draw insights from multiple lenses, including implementation science, participatory research, and the social sciences. We present case studies from the Southeast Asia (SEA) region, participatory methods, and five practical tips for the implementation of new guidelines and policies.

We begin by emphasizing an overarching message of Module 8: the need to tailor approaches for the diversity of contexts, as there is no one-size-fits-all approach or framework to implementing the guidelines. When seeking to develop useful and effective guidelines, the *cultural, social, economic, environmental, and political contexts* of the country, region, or organization must be carefully accounted for because they will impact the uptake and implementation of proposed actions and strategies. This is particularly essential for the Southeast Asian region, which is richly diverse. Thus, engagements that aim to catalyze guideline use should carefully tailor and account for this diversity. For example, subregional contexts may differ significantly even within one country due to climate, industrial, or religious factors. All forms of engagement, including the use of participatory approaches to aid implementation (outlined later in this chapter), require that implementers understand the implications of implementation in diverse contexts. We therefore strongly encourage having a strong grasp of context from the onset of the program and implementation.

Understanding the context from multiple levels

Ensuring that implementation is tailored to the local context is essential to guarantee that actions and decisions are appropriately formulated based on the socio-political, cultural, institutional, and ecological needs and capacities. The context comprises several layers of the social environment: public policies and regulations, intra- and inter-community relationships, organizational culture, interpersonal exchange, and individual factors (Figure 8-1.1). Addressing individual factors starts with understanding who must be involved and when, as described in the succeeding section[1]. Two

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[1] Case Example: Insights into Virulence, Disease Transmission, and Socio-Ecological Drivers in Cambodia' in Module 6 illustrates a practical way for which this can be accounted. Another way is to use a Participatory STEEP Analysis described in the section on participatory approaches later in this chapter

examples of individual-level factors are their attitudes toward the current policies and attitudes toward modified or new practices that the guidelines promote. It may also be useful what their attitudes are toward any kind of change in general. In Module 2, the case example, "Nipah Virus Outbreak in Malaysia and Singapore," illustrates how a fear of change can impact not only the success of the farming industry but also, whether guidelines like this NASEM/INGSA collaboration are used.

FIGURE 8-1.1 The social environment in which One Health challenges arise, adapted from the socioecological model.

Individual factors are only part of the context. There are higher levels that can hinder or facilitate implementation, and these can be studied or assessed in various ways (e.g., research and reviews). A useful way to help uncover higher levels of context is to learn from past challenges and successes. For example, the One Health Workforce Program, which established the Southeast Asia One Health University Network (SEAOHUN), used a unified approach and close collaboration network that has fostered robust university networks and educational programs across SEA (Nguyen-Viet et al. 2012). However, it faced issues with its funding that is time-limited and dependent on one entity, eventually jeopardizing the long-term implementation of the program. Thus, we recommend that in the initial stages of guideline development and implementation, it would be useful to map out and answer questions such as: What programs and projects have succeeded here? What has failed, and why? Which layers of the context played a significant influence on the outcomes of implementation?

CHARACTERISTICS OF THE PEOPLE ENGAGED

Engaging local leaders and potential partners in implementation refers to building relationships and collaborating with individuals or groups who have the power to influence decisions, policies, or opinions within a specific context. Specifically, engaging leaders and partners across the animal value chain is essential to tailor the key messages of each module to the local context. Having

appropriate partners can offer more meaningful engagement and committed partnerships. They can serve as catalysts and champions for transformational changes in the community relevant to One Health. For example, a case example titled, "Adoption of Wildlife Health Surveillance into National Policy in Laos," in Module 3, has exemplified that engaging the right partners, such as animal rescue centers, scientists, and decision-makers, can mobilize to create a network to successfully produce operating standards for wildlife health surveillance for the management of disease information. They should ideally be involved in each step of implementation— from the planning, designing, and drafting, to finalizing stages.

Local leaders or partners for implementation can be selected based on the populations they represent and serve, area of expertise, and type of affiliated institution (e.g., national, provincial, and local governments, research institution), as well as geographic representation, type and length of experience, career stage, and gender. We take note that selecting local leaders or potential partners will require careful reflection on their legitimacy, credibility, and power dynamics held over their respective organizations or constituencies. We recommend a thorough mapping and review of who these actors may be. A simple Participatory Social Network Mapping (see Table 8.1) can be done with diverse actor groups, organizations, and sectors of the local context. The social network output from this participatory approach can help carefully identify which local leaders or potential partners are perceived by the locality to be more trustworthy and deemed better to deliver the collective goals. However, we caution that selecting participants in a network mapping exercise or any related participatory approach should in itself be done with caution. Participants may have their vested interests or existing alliances that will favor certain leaders or groups. This process can benefit from pre-process activities such as a review of documents or informal conversations with actors.

Engaging with local leaders and partners is often a long-term endeavor that requires patience, persistence, and adaptability. Building strong relationships grounded in trust is essential for meaningful collaboration and influence in decision-making. While ways to engage local leaders and potential partners vary depending on the context, some universal best practices can be used:

- **Networking to Build Trust and Respect:** Once key individuals or groups with influence in areas of interest have been identified, establish professional connections and relationships through networking to build mutual trust and respect. Having a sufficient understanding and knowledge about individuals or groups can be an asset.

- **Inclusive Listening and Feedback:** During convenings, listen to opinions, concerns, and suggestions shared by all parties involved, regardless of ranking, expertise, and seniority. Some local contexts might also require you to follow certain socio-cultural protocols (e.g. letting community elders speak first). It is also beneficial to be transparent and open about intentions for engagement and any potential limitations of activities. Seeking feedback and insights from local leaders and partners is a critical element to building trust, such as promoting storytelling, as illustrated by numerous powerful stories shared throughout this guidebook. There should be spaces and mechanisms for dynamic and timely feedback, thus improving final outcomes.

- **Delivering Mutual Value:** Provide value, such as information, expertise, or resources, that benefits all parties' interests and aligns with their goals and priorities. It is also essential to be open to compromises to find common ground.

- **Effective and Tailored Communication:** As highlighted in many modules of this guidebook, tailoring the communication style and language used, as well as carefully selecting non-technical words and examples that are relevant to local leaders at every step of the animal value chain, will level the ground for any participatory activities, co-producing of actionable products, and pave the way for follow up discussions.

- **Maintaining Sustainable Partnerships:** Sustaining relationships is critical, especially between spillover events, so each party involved is ready to act if such events occur. Using tools to regularly assess the effectiveness of engagement efforts with local leaders and partners can also help adjust engagement strategies to create meaningful collaborations.

PARTICIPATORY APPROACH TO IMPLEMENTATION

Illustrating a Participatory Approach through our Guidebook Development

The considerations suggested above pertain to implementation processes in general. In this section, we delve into the *participatory approach to implementation* that we believe can be beneficial in achieving desirable outcomes to implementation. In fact, the very development of this guidebook─ from Modules 1 to 8─ served as a model of how to operationalize such a participatory approach. At the beginning of our project, a core team was formed at the U.S. National Academy of Sciences, Engineering, and Medicine (NASEM) and the International Network for Governmental Science Advice (INGSA) to crystallize the scope and goal of the guidebook. Participants for developing this guideline were selected intentionally and iteratively with authors representing over 25 countries, including Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam (see Figure 8-1.2 for program structure). There was diversity across career stages, from international non-governmental organization (NGO) employees, university faculty, government representatives, and Ph.D. trainees, each bringing a unique set of experiences and perspectives. The team was composed of experts including virologists, public health practitioners, wildlife veterinarians, natural resource experts, and social scientists. Although social scientists are often only recognized marginally in guideline development of infectious diseases, or brought onto the team later in the process, this team embraced the community-based participatory research (CBPR) approach.
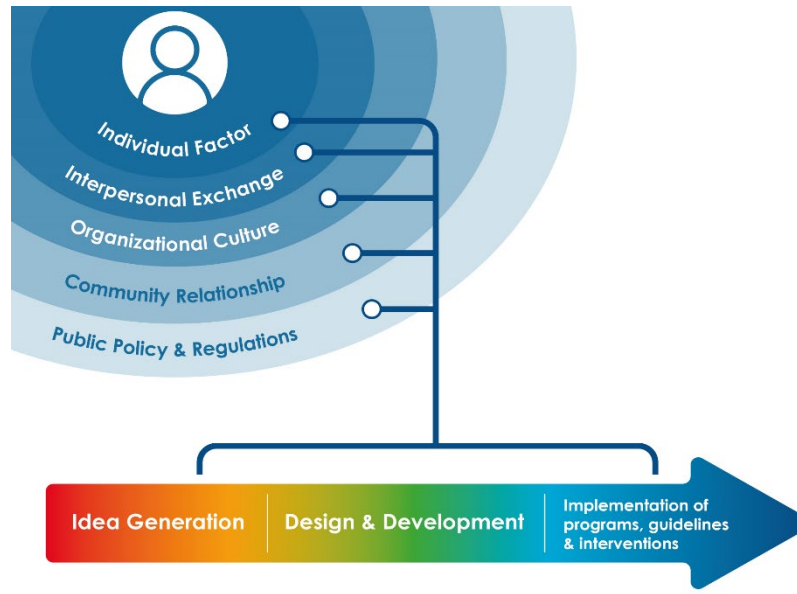
FIGURE 8-1.2. Mapping the socioecological systems of One Health innovations and implementation.

The authors attempted to "practice what we preach" by illustrating that a participatory approach to implementation can be operationalized. We acknowledge that the primary goal of this project, to disseminate effective guidelines aimed at the mitigation of zoonotic spillover, was predetermined by NASEM. We were guided by this pre-determined goal to conduct participatory processes to ensure that the guidelines themselves would be acceptable, useful, tailored, and thus utilized in the various communities, countries, and regions represented by our partners. We hope that our guidebook development process can exemplify how we envision a participatory and iterative engagement in implementation.

Operationalizing Participation in Implementation

A participatory approach to implementation means that there is genuine engagement of diverse actors (see Module 6 on "actors across value chains") in informing, shaping, and delivering implementation. We acknowledge that participation and engagement can be defined along a continuum from simple consultation by community representatives to processes that aim to promote "full control" to community partners. It is generally accepted that participation should involve stakeholders "at all stages" of the process, from the inception of an idea through implementation, evaluation, and dissemination. Engagement and participation should not be limited to tokenism, as in the case of infrequent and casual public consultation or having a predefined number of underrepresented groups in meetings. Rather, it should be empowering and provide the ability to facilitate longer-term partnerships. These allow for developing and implementing policies, strategies, and actions to counter zoonosis that are more holistic and better perceived as legitimate and credible─ effectively addressing the key messages of each module.

A participatory approach allows actors to actively share their knowledge, expertise, experiences, and personal insight during the process. More importantly, these approaches allow them to learn from each other, build trust, and converge for a collective aspiration of implementation. Empowering diverse actors can translate to a sense of ownership and accountability, eventually

allowing for better uptake of outcomes emerging from their collective outputs. Several cases and examples across this guidebook have shown this, including:

- World Health Assembly establishing a WHO convention on pandemic prevention, preparedness, and response (known as "WHO CA+"). Located in "Module 3: Efforts to Prevent Transboundary Disease Outbreaks in the Southeast Asia Region."

- Wildlife Conservation Society's (WCS) Counter Wildlife Trafficking Program operates in 32 countries along major supply chains with locally led programs working in partnership with governments, in-house law enforcement, and criminal justice expertise. Located in "Module 3: Efforts to Prevent Transboundary Disease Outbreaks in the Southeast Asia Region."

- Stakeholder Mapping Using Power-Interest Grids (X-Y Chart). Located in "Module 6: Strategies for Engaging Diverse Stakeholders Across the Live Animal Value Chain to Address Risk."

- 'The Lawa Model' - Strategy Control Method using EcoHealth/One Health Approaches in Khon Kaen Province, Thailand. Located in "Module 7: Enhancing Zoonotic Disease Management by Addressing Knowledge Gaps and Implementation Barriers."

- Regional initiatives in preventing transboundary disease outbreaks: The Mekong Basin Disease Surveillance (MBDS) Network. Located in "Module 7: Enhancing Zoonotic Disease Management by Addressing Knowledge Gaps and Implementation Barriers."

We outline several participatory methods below that can be used in multiple decision-making points relevant to each module of this guidebook. These participatory methods are meant to aid implementation, such that critical decision-making questions that need to be considered for effective implementation are answered collaboratively. We provide decision-making questions common in participatory approaches and guidebook modules that can serve as a key reference (i.e., provide examples or content). Several references (e.g., Calub, 2004; Chambers, 2012; Kaner et al., 2014; Narayanasamy, 2009) can guide further operationalization of these methods, especially those that are rooted in Participatory Rural Appraisal (PRA) methodologies (e.g., UN FAO PRA Manual, CGIAR Participatory Frameworks). These approaches can be used to complement or supplement each other, depending on the time and resources available. While our example decision questions are set for a community level, these approaches can be applied to multiple scales (e.g., province, regional, national).

TABLE 8-1 Participatory methods relevant to implementation.

Goal	Example Decision Question
Participatory Seasonal Calendar	
To co-identify regular activities, phenomena, and other time-related indicators in a calendar year, especially for indicators that have high seasonal nuances (e.g., monsoon-season specific). (e.g., Catley et al., 2002)	Which socio-cultural activities (Module 6) coincide with the occurrence of priority pathogens (Module 4) or an increase in illegal wildlife trade (Module 3) in the community?

Participatory Trends or Change Analysis	
To co-develop long-term trends of key indicators over a series of periods, especially for indicators that have no or minimal prior data (as in the case of several community-level indicators) (e.g., Calub, 2004)	How have aspects of agri-food systems and community well-being changed over the years in the community (Module 6)?
Participatory Timeline Building	
To co-develop key events or phenomena that happened before or after an event of interest, especially to explore whether these events are associated (e.g., Hurtubise and Joslin, 2023)	What are the available policies and other regulatory measures before and after (Module 3) a major health event in the community (Module 2)? What have we learned from a specific event (Module 4) that can be applied to other events by a specific set of actors (Module 6)?
Participatory Transect Walks	
To co-develop indicators in spatial points of interest, especially to observe on-ground social and ecological dynamics of indicators. Unlike Participatory Landscape Mapping, this approach focuses on what can be observed in a well-connected area (e.g., roads) (e.g., Leuenberger et al., 2022)	Which spatial points in the community are humans at most risk from priority pathogens (Module 4), and what makes these points high risks (Module 2)?
Participatory Landscape Mapping	
To co-develop the importance of spatial areas of interest using pre-identified indicators, especially for indicators that require on-ground validation (esp. highly contested/conflicted areas). Unlike Participatory Transect Walks, this approach focuses on the actual spatial scale as seen from the top view of a map. (e.g., Boongaling et al., 2023)	Which spatial areas of the community are reservoirs of the priority pathogens are closely located (Module 4), and who are the actors around these spaces (Module 6)?
Participatory Systems Modeling	
To co-identify important dynamics of a systems-of-interest, especially when trying to see if parts of a system enable certain events to occur (e.g., Suwarno et al., 2009)	What actor groups, establishments, and processes constitute the food system of the community (Module 6), and which ones serve as facilitators of illegal wildlife trade (Module 3), or disease spread (Module 4), or surveillance (Module 5)?
Participatory Social Network or Stakeholder Mapping	

To co-identify important actors or actor groups and their relationships, especially when identifying which actors can influence certain issues (e.g., Boyle et al., 2022).	Which stakeholders (Module 6) strongly influence systemic issues in One Health (Module 7) in the community?
Participatory Voting and Prioritization	
To co-identify which requires the most urgent attention, especially for those that require strong community consensus (e.g., Castelli et al., 2020).	Which priority pathogens (Module 4) should receive community resources or efforts for community-led monitoring (Module 2)?
Participatory Drivers Assessment	
To co-identify social or ecological drivers that influence certain events, especially drivers that we have minimal or lacking knowledge in terms of the direction it can plausibly take (Truong et al., 2019).	What are the drivers that hinder the operationalization of One Health in the community (Module 7)?
Participatory Scenarios Development	
To co-imagine plausible alternative futures given certain highly uncertain and impactful drivers or assumptions, especially when imagining futures for longer-term planning (Shantiko et al., 2021).	What will the community's agri-food systems look like (Module 6) under different One Health strategies (Module 7) and after implementing risk based surveillance (Module 5)?
Participatory Social, Technological, Ecological, Economic, and Political (STEEP) Analysis	
To co-identify the social, technological, ecological, economic, and political implications of decisions (e.g., Ngor et al., 2010).	What are the potential social, technological, ecological, economic, and political strategies (Modules 6 and 7) and outcomes of implementing stricter regulations for wildlife trade (Module 3)?

Several of the participatory approaches outlined in Table 8-1 can help better understand the local contexts of the area planned for implementation. For example, building a participatory timeline can help identify the kinds of programs and projects that have previously been implemented. The timeline can initiate critical reflection and conversation on the factors that determined how these programs persisted, changed, or evolved over time. Another way is to use a participatory seasonal calendar to see what the different local socio-cultural conditions and ecological events the local context of interest views as important.

An example of co-creating decisions using participatory approaches is available in Module 6's case on smallholder cattle-raising in the Philippines (Galang and Calub, 2020). Module 6 describes the seasonal trends of cut-and-carry, a feeding strategy in which freshly cut grass is fed to farming animals throughout the grazing season. Using participatory seasonal calendars, key areas of

the community where cut-and-carry and grazing occur (e.g., grasslands, natural forests) across two seasons (i.e., summer and rainy) were collectively identified by the cattle raisers. This case also emphasized increasing dependency on areas (i.e., natural forests) that was explored using participatory trends analysis, in which cattle raisers had to collectively decide which areas had been getting more dependent over the others. The participation experience in the process helped the smallholder cattle-raising community better reflect on the social-ecological changes in their landscape, which in turn can have profound implications on zoonotic spillover.

Module 6 also describes how smallholder cattle-raising is a family livelihood, which was highlighted by Sevilla et al. (2000). This was done through participatory social network modeling, in which cattle raisers collectively described the actors and their roles in cattle-raising. Outputs from the participatory approach uncovered that all members of the family are key actors in the livelihood, indicating that all family members are potential entry points for zoonotic spillover. In another example, Galang and Vaughter (2020) identified that animal production in Southern Philippines strongly depends on land sharing and commonality. This was uncovered using a modified participatory landscape mapping, in which they used photographs of key spatial areas of the community and asked diverse residents to identify the importance of each spatial area for their well-being and livelihood regardless of land ownership. The outputs of the participatory approach allowed the diverse members of the community to see their reciprocal interaction with their environment and one another, especially those who do not normally have regular interactions with their environment (e.g., youths, non-farming residents, decision-makers). Overall, such an approach provided insights into potential pathways for zoonotic transmission.

Tapping Existing Networks to Initiate Engagements

Ensuring genuine and durable participation for implementation necessitates targeted investments (e.g., time, financial, and personal). In several cases, higher levels of contexts are often disconnected from community needs (Figure 8-1.2) and can hinder participation and engagement even if individual factors are in place. Thus, we recommend that initiating engagements can benefit from tapping existing networks. Organizations that have a long history of working in varied contexts can also be tapped to learn from their (non)successes, including learning from their strategies. In Southeast Asia, several networks and organizations exist that can help catalyze a participatory implementation of the contents, strategies, and recommendations of this guidebook:

- **USAID's One Health Workforce – Next Generation Project,** performed pre-service One Health education as a means to train university and post-graduate students.

- **US Centers for Disease Control and Prevention (CDC)** that aid in training programs and outbreak investigations worldwide.

- **EcoHealth Alliance**: This international organization works on various One Health initiatives in Southeast Asia, including research on zoonotic diseases and their transmission dynamics, as well as efforts to conserve biodiversity and protect ecosystems.

- **World Health Organization (WHO)** provides technical assistance and guidance to Southeast Asian countries in managing zoonotic diseases and public health emergencies. They support capacity-building and response efforts. The Regional Office for the Western Pacific, based in Manila, Philippines, serves as the gateway for communication between WHO and Member States in Southeast Asia.

- **Food and Agriculture Organization (FAO)** has been actively involved in supporting efforts to control zoonotic diseases. They work on projects related to disease surveillance, capacity-building, risk assessment and establish reference laboratories for key pathogens.

- **International Livestock Research Institute (ILRI)** is a research organization that focuses on livestock-related issues, including animal health, food security, and livelihoods, in various parts of the world, including Southeast Asia. ILRI plays an important role in public health and pandemic preparedness, including studying the transmission dynamics of diseases like avian influenza and developing strategies to prevent their spread. ILRI also studies livestock value chains in Southeast Asia, from production to marketing and consumption. As discussed in Module 6, understanding these value chains helps identify opportunities for improving food security and safety.

- **Wildlife Conservation Societies** collaborate with government agencies to monitor and study zoonotic diseases in wildlife.

- **ASEAN One Health University Network (ASEAN-OHUN):** This network brings together universities and institutions across Southeast Asia to promote education, research, and training in One Health principles. It aims to build capacity in the region for addressing health issues at the human-animal-environment interface.

    a. **College of Public Health with the University of the Philippines** is developing a master's program on One Health, received grants from USAID and Chevron through the Southeast Asia One Health University Network

    b. **Philippine One Health University Network** has a partnership with the Bureau of Animal Industry to look into Leptospirosis in swine in Los Banos, especially in farms for food production.

    c. **Thailand One Health University Network (THOHUN):** Like ASEAN-OHUN, THOHUN brings together universities in Thailand to promote One Health education and research, fostering collaboration between different disciplines.

    d. **Cambodia One Health University Network (Cambo OHUN):** This network in Cambodia aims to strengthen the capacity of universities and institutions in the country to apply One Health principles in research and education.

    e. **Malaysia One Health University Network (MyOHUN):** MyOHUN brings together universities and government agencies across Malaysia towards capacity building and research and development activities through collaborative multidisciplinary teams.

    f. **Indonesia One Health University Network (INDOHUN):** This network of higher education institutions across Indonesia promotes multidisciplinary teams across the One Health sectors.

- **Regional Emerging Diseases Intervention (REDI) Center**: Located in Indonesia, the REDI Center is dedicated to research and training in the field of emerging infectious diseases, with a focus on zoonotic diseases. It plays a crucial role in strengthening regional capacity for disease surveillance and response.

- **The Mekong Basin Disease Surveillance (MBDS)**: This regional network, comprising several Southeast Asian countries, focuses on improving disease surveillance and response in the Mekong Basin region. It aims to prevent and control diseases, including zoonoses, through a collaborative One Health approach.

- **Vietnam One Health Partnership for Zoonoses (OHP)**: This program in Vietnam focuses on addressing zoonotic diseases and antimicrobial resistance through a multisectoral approach. It involves cooperation between human and animal health sectors and emphasizes community engagement.

- **Philippines Emerging Infectious Disease Research and Training Center (EIDRTC)**: The EIDRTC focuses on research, training, and capacity-building related to emerging infectious diseases, including zoonoses.

- **The Chinese Center for Disease Control and Prevention** addresses public health priorities that affect China and the world through collaborations that aim to strengthen global health security through training field epidemiologists and support for the publication of public health information.

- **National Centre for Infectious Diseases (NCID)** in Singapore is a state-of-the-art facility dedicated to the management and prevention of infectious diseases, including zoonotic diseases. It serves as a hub for research, training, and clinical care, emphasizing the importance of an integrated approach to disease control.

- **Southeast Asian countries' Ministries of Health, Agriculture, and Forestry** are also essential partners to help implement disease surveillance and control measures to prevent the spread of zoonotic diseases.

  a. **One Health Unit, Ministry of Health (MOH)**: The MOH in Malaysia has established a One Health Unit that focuses on coordinating efforts to address zoonotic diseases. This unit works in collaboration with other relevant government agencies and stakeholders to prevent and control disease outbreaks.

  b. **Departments of Veterinary Services** are responsible for animal health and welfare. They play a crucial role in monitoring and controlling zoonotic diseases, such as avian influenza (bird flu) and rabies for example, through surveillance and vaccination programs.

PRACTICAL IDEAS ON HOW TO FOSTER GENUINE ENGAGEMENT

All types of engagements in a participatory approach to implementation, including face-to-face discussions, working meetings, and real-time drafting of documents, can be inclusive and productive in working towards a common goal. However, engaging participants in a meeting room can be challenging. This challenge arises because engagement is not achieved by simply having the appropriate participants in the room, but rather by having them actively engage the discussion and feel ownership of the task at hand. Several barriers, especially along the individual factor context (Figure 8-1.1), can be addressed to foster engagement, such as:

1. **Language Barriers:** Navigating language barriers becomes challenging during dynamic discussions, hindering the ability to express nuanced opinions in a non-native language in

real time. For instance, understanding conversations in a certain language may be possible, but articulating rebuttals effectively in that language may remain a struggle.

2. **Cultural Barriers:** Reluctance or hesitancy to participate in discussions due to unspoken cultural norms and hierarchical pressures (e.g., "I must not speak up to someone who is more experienced than me.")

3. **Balancing Priorities:** Tasks and responsibilities compete for the participants' attention during a meeting (e.g., "I have an important, but unrelated report due tonight, so the only time I can edit my draft is during this meeting.")

4. **Politics and Values**: Politics, values, and ideas among participants that might conflict with one another.

Illustrating How to Foster Engagement in a Multicultural and Multidisciplinary Setting

From the 1st to the 3rd of June 2023, a group of experts from the development committee of this guidebook gathered in Kuala Lumpur, Malaysia to reflect on the final stages of guideline development and to better reflect local perspectives into the final draft. The following questions and tips supported improved participant engagement when engagement was low, potentially due to language and cultural barriers, and competing responsibilities (Table 8-2).

TABLE 8-2 Possible actions by a meeting facilitator, questions to assess, and next steps to improve participant engagement.

#	Facilitator Action	Question to Assess	Next Steps
1	Agree on common communication, rules of engagement, and standards	Provide a base for "ground rules" (e.g., being present and on time, respecting differences, asking questions, acknowledging contributions, etc.) and ask the audience what else could be added to this list.	Encourage active participation based on these ground rules while periodically evaluating the effectiveness of these established communication rules. Adjust as needed.
2	Observe the interpersonal dynamics in the meeting	Is the discussion being dominated by only a few participants? Are people looking at their computers for unrelated tasks?	Consider switching from an open discussion to an engagement exercise, using sticky notes, posters, whiteboards, etc. Writing down thoughts will give participants time to reflect, formulate, and distill thoughts at their own pace. Activities can also consider personal, group, and paired discussions to ensure that various

			ways of thinking and discussing are supported
3	Try to maintain language that is understandable by everyone	Is there use of jargon, or words with multiple meanings depending on disciplines?	Remind speakers to avoid the use of acronyms and abbreviations.
4	Identify participants who may have difficulties with the common language spoken at the meeting	Are there multiple participants with a common language(s) that could be paired for mutual translation support? Are non-native language speakers able to contribute to the discussion?	Engage in individual conversations to identify participants who may struggle and pair them with bilingual participants. Use live translation such as Google tools. Make sure to provide more pauses for these participants to catch up. Use visuals and live captions if on Zoom and provide written information that may be more readily comprehended than verbal communications for non-native language speakers. Arts-based approaches (e.g., illustrations, poetry, songs) can also be explored to provide different opportunities for participants to better communicate and express their thoughts.

A focus on the "gatekeepers" for implementation

Engagement requires careful observation and accounting of potential gatekeepers, or actors who are empowered to move forward with certain aspects of the implementation process (Singh and Wassenaar, 2016). These aspects range from power over the necessary social capital or community networks needed to bring diverse actors into the participatory approaches to access different data that are important for evidence-based decision-making. Gatekeeping can hinder implementation by controlling these aspects; however, we also believe that gatekeepers can serve as trusted allies and catalysts for implementation. Several cases have shown us the role of gatekeepers in One Health or zoonosis management, such as the successful decentralization of a One Health system in response to

anthrax outbreak in the Nakuru County, Kenya. This example highlights the importance of active engagement from various actors, including farmers, veterinarians, and local health departments, for disease outbreak mitigation. Thus, it is important to understand the characteristics of the actors who may serve as gatekeepers and find ways to also engage them in the implementation process.

Participatory social network mapping, for example, can show who are these potential gatekeepers. Usually, these are the actors who are "most central" to the community or those who have the most relationships among other actors. They may also be the "key bridges" to those who connect important actor groups or clusters of organizations in the community. More information on this can be found in the 'Case Example: Stakeholder Mapping Using Power-Interest Grids (X-Y Charts) in Module 6.

Not only should we engage local and other types of experts to get guidelines utilized, but it is also beneficial to understand the characteristics of the individuals who will be the gatekeepers in the process of getting these guidelines used.

Characteristics of the Guidelines, and Policies and Practices Encompassed that Make Them Up

So far in this module of the guidebook, the authors have tried to illustrate how implementation of guidelines is facilitated by a thoughtful, active, and sufficiently resourced plan that accounts for engaging the "right" *people* in appropriate collaborative and participatory *processes*, taking into consideration the *contexts* (e.g., the traditional cultures, the political characteristics of the organizations or institutions, etc.) in which the guidelines will be used. Guideline implementation that includes policies and practices usually does not occur spontaneously, naturally, or by accident, even if these guidelines seem to be based on established science. Thus, we now turn our attention to consider the ways in which we can tailor guidelines to help overcome perceived barriers such as "It is too much trouble to change my behaviors now," or "The guidelines are too confusing or contradictory," and "I don't see how these guidelines will really benefit the situation in the long run."

We have learned that guidelines get used when the practices and policies they promote are easy to understand (**Complexity**) when the costs of changing behavior are low (both from a monetary and psychological perspective), especially if there is a perception that one can back off new behavior and return to old practices if necessary (**Trialability**), when the guidelines' practices and policies lead to plainly observable benefits (**Observability**), when the guidelines promote behaviors that clearly work better than what is currently being done (**Relative Advantage**), and when the guidelines promote solutions that are not terribly different from what people are used to doing (**Compatibility**) (Figure 8-2).
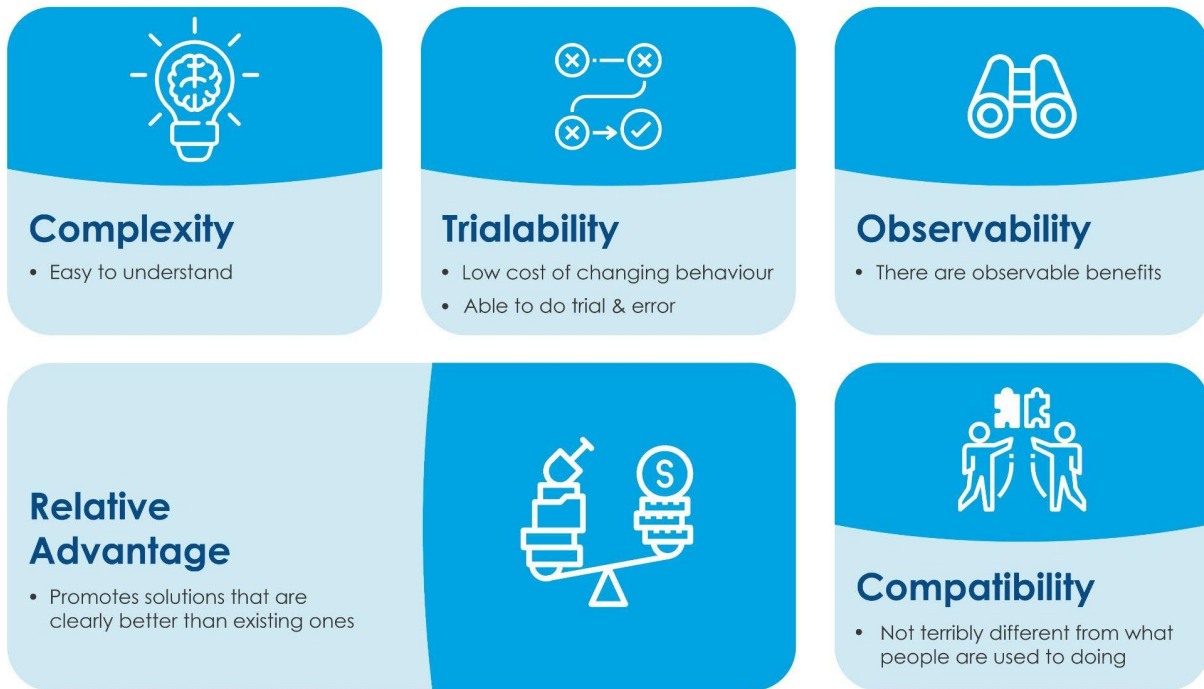
Complexity
- Easy to understand

Trialability
- Low cost of changing behaviour
- Able to do trial & error

Observability
- There are observable benefits

Relative Advantage
- Promotes solutions that are clearly better than existing ones

Compatibility
- Not terribly different from what people are used to doing

FIGURE 8-2. Characteristics of a successfully implemented guideline.

A look back to previous case studies presented in this guidebook can help illustrate some of these points and offer examples of elements to consider when attempting to implement the practices and policies recommended in our guidelines. These case studies illustrate the initially successful application of strategies that effectively mitigated zoonotic spillover. However, close scrutiny of the cases illustrates barriers and facilitators of sustained implementation of these strategies. The cases are offered so that you, the reader, might contemplate how to adapt similar solutions to local and regional contexts of implementation and how to engage stakeholders in a "whole of society response" that utilizes both bottom-up and top-down approaches.

Hendra in Australia: challenges to long-term, sustained implementation

In Australia, years of research resulted in a "mechanistic" understanding of local zoonotic spillover events (Eby et al., 2023). The discussion outlined below was the result of multidisciplinary and cross-module collaboration and discussion between participatory scientists who co-authored this module and ecologists who co-authored Module 2 of this guidebook. These discussions facilitated an exchange of ideas and strategies to address the complex issue of spillover of Hendra virus from bats to horses in subtropical Australia (Eby et al., 2023).

Put simply, a loss of native habitat drove bats to encroach upon agricultural and urban landscapes, encountering horses and other domestic or traded animals. To address the issue, native flowers and five species of trees were planted to conserve, restore, and rehabilitate severely depleted winter habitats for the bats. However, attempts to make this research-based solution routine and sustained practice have encountered difficulties related to social and cultural pressures. Land use change policies have proven difficult to implement due to potentially competing interests by stakeholders in development, industry, and agriculture. It has been difficult for researchers to build

the amount of evidence needed to effect changes in legislation. In addition, local communities have balked at such interventions because of the negative perceptions of the bats as "nasty, disease-ridden, blood-sucking" pests.

In response, individuals working with local communities, including anthropologists, epidemiologists, and ecologists, have turned to a creative solution. When presenting restoration and rehabilitation interventions, advocates refrained from focusing on bats, instead portraying efforts to provide habitat for pollinators such as birds and gliders, which have the same migratory cycles and/or nomadic behaviors as bats. Koalas also depend on the same tree species and were also used in marketing strategies for habitat restoration initiatives. In pivoting to this approach, implementers have provided a locally palatable, culturally compatible, simple-to-understand solution. Years of monitoring Hendra virus cases and dissemination of findings to engaged stakeholders will improve the observability of results and answer the question of whether the effort will be perceived to clearly work better than what transpired before and is sustainable. This is especially important because the strategy of increasing the spatial separation of reservoir hosts and potential spillover hosts is not novel. After the Nipah virus outbreak in Malaysia in 1998-1999, mango trees and other trees preferred by bats were removed from the proximity of piggeries (Epstein and Field, 2015). Though considered a successful case, additional investigation is required to understand the barriers and facilitators of implementation so that lessons learned can be transferred and adapted to other local contexts.

Nipah in Bangladesh

A Nipah virus outbreak in Bangladesh also proves illustrative in terms of the characteristics of an intervention that impacts implementation. After an outbreak in Bangladesh, scientists were unsure of how the virus was being transmitted from bats to people (Luby et al., 2009). Teams of anthropologists linked the issue to date palm sap consumption by bats and humans and worked with local communities to identify a solution. Bamboo skirts were placed over the top of sap collection pots, denying bats access to the sap. The skirts were relatively cheap (though any additional cost is a barrier), simple, compatible (they resembled fishing and other types of bamboo nets used by local communities), and an effective solution. The relative advantage of harvesting cleaner, clearer sap for the market was easily observable. However, routine use of the skirts has been elusive. Voluntary implementation of the skirts has not been sustained, as utilizing bamboo skirts has been continued only where programs are present to sustain the intervention. Additionally, fearing the further spread of the outbreak, the national government banned the consumption of date palm sap entirely (Parveen et al., 2016). Therefore, placing bamboo skirts on sap collection pots to make the sap less risky for consumption was a type of harm reduction strategy for a practice that was prohibited by the government. This policy has been met with resistance from local communities because date palm consumption is a culturally ingrained practice that continues despite the mandate to cease consumption. This context presented challenges in risk communication for infection prevention. Should there be messaging for reducing the risk of infection for a practice - date sap consumption - that has already been banned by the government, given community members may not be adhering to the rules?

Strategies for Implementing Zoonotic Prevention Measures

In general, some suggestions regarding the characteristics of the solution/innovation to be implemented include the tips outlined below. These tips also aim to provide ideas on how to address various characteristics of a successfully implemented guideline (Figure 8-3).

TIP 1: Keep it simple.

Halting the transmission chain from animals to humans through separation is perceived as a simpler idea compared to implementing complementary and essential practices such as incorporating new technology to increase biosafety measures or introducing extensive surveillance. In developing local guidelines, what are the costs and benefits of emphasizing "simple" solutions that are more likely to be accepted and practiced versus potentially more effective but also more complex solutions that are less likely to be practiced?

TIP 2: Focus on compatibility.

Among the "additional solutions" in the case of the Nipah virus in Malaysia and Singapore was to encourage the traditional practice of keeping smaller and less connected pig operations, operated family-style and by generation to generation. These practices may be attractive because of their familiarity with "how things have always been done" and thus avoid the perceived objection of cultural incompatibility and just plain reluctance to change. Are there ways to make practices and policies not seem alien or strange?

TIP 3: If it works, make sure the results are plain to see.

The example of educating consumers and stakeholders about the potential health risks of consuming high-risk species like civets and pangolins via media campaigns, community outreach programs, and collaboration with local NGOs and wildlife conservation groups is an example of raising public awareness about the risks associated with wildlife trade. However, though there is a tendency to focus on the observability of the *problem* on one end of the value chain (the consumers), sustained use of innovative policies and practices needs to be better promoted by those at the other end of the value chain (producers, for instance). And yet, one must also consider the observability of *solutions* that "work." The visibility of the solutions may be disseminated by media or by interpersonal information exchange (e.g., reputation among the community of a successful business, etc.)

The Participatory One Health Digital Disease Detection (PODD) in Chiang Mai, Thailand referenced in Module 6 is an example of data management, sharing, and security (Yano et al. 2018). Recall that, working together with a diverse team consisting of veterinarians, public health officers, livestock officers, community volunteers, and geographic information system (GIS) experts, the PANORAMA project introduced smartphone and web-based platforms to combat zoonotic spillovers and monitor emerging animal and environmental health threats. The success of this initiative became widely publicized.

TIP 4: Make sure to develop guidelines that include practices and policies that are plainly going to be perceived as "better" than what is currently in place.

TIP 5: Ensure that there is "low risk" for the people adopting new behaviors by allowing for the possibility that practices and policies are flexible according to circumstances. This provides an opportunity for adopters to be able to "back out" of their commitments. Our Ultimate Vision of a participatory approach to implementation

What we outlined in this module is not prescriptive, but rather ideas to consider. While we borrow from multiple lenses of implementation science, participatory research, and social sciences, these are also not exhaustive but rather build on our own experiences within these fields. We cannot emphasize enough our overarching message on the need to tailor to a diversity of contexts. We

encourage users of this module to make this a central thought going through the different ideas we presented in this module: *How is this participatory tool applicable to our context? Which network or organization had prior successes in our context, and what can we learn from them? What characteristics of implementation should we bring more attention to?* These are just some of the questions for reflections that can help guide a participatory approach to implementation.

We end by sharing our own vision of how our guidebook can catalyze participation and engagement (see Annex 1 for full details). We hope that through our guidebook, we can mobilize and engage actors in academia and research, civil society groups and non-governmental organizations, national governments and regional bodies in the region, local government units, and private sector and industry (Figure 8-4). We hope that actors collaborate in implementing the contents, strategies, and recommendations of this guidebook in addressing zoonotic spillover in terms of its multi-dimensional, multi-disciplinary, multi-sectoral, and multi-national needs, gaps, and potential solutions.

FIGURE 8-3. A collective vision for the use of this guideline among actor groups

ANNEX 1- AUTHORS' COLLECTIVE VISIONS ON THE USE AND IMPLEMENTATION OF THE GUIDEBOOK

In June 2023, the authors of the modules of this guidebook participated in a workshop session to co-develop "collective visions" on the potential usage and implementation of this guidebook across organizations, actor groups, and scales. Specifically, we brainstormed what approaches and channels can leverage this guidebook's uptake and eventual implementation among diverse user groups. These collective visions also reflect our personal aspirations to inspire readers on this guidebook's value as a tool and reference to counter zoonosis in Southeast Asia.

We first present our general collective vision for this guidebook. Then, we outline our visions for each potential user group, including why we believe this vision is plausible and some ideas on how to realize these visions. Afterward, we outline our proposals for the knowledge dissemination of this guidebook. For the participatory approach we have followed to develop these visions and suggestions, please see Box 1.

A General Collective Vision by the Authors

Our ultimate aspiration for this Guidebook is that it becomes a useful, insightful, and inspiring product for all actor groups, especially those employing a One Health approach to their work in communities. We hope it provides holistic guidance for actor groups in formulating and implementing more sustainable research, local and national policies, and public agenda (e.g., national strategies) to prevent disease spillover. We hope this guidebook can empower actor groups to tailor their efforts to SEA's local challenges and needs, eventually catalyzing local ownership of One Health projects and programs. More important than its potential role in individual capacity and knowledge-building, we hope this guidebook will inspire actor groups on the importance of collaboration and working proactively across sectors, interests, and disciplines (Figure 8-4).

Moreover, we hope that readers of this guidebook, not only the actor groups currently involved in One Health, will have a better appreciation of the role of our ecosystems in human health, especially in the human-animal-environment interface. We hope we can inspire the general readers of this guidebook with the level of thought placed on the complexity of addressing zoonotic spillover in terms of its multi-dimensional, multi-disciplinary, multi-sectoral, multi-national needs, gaps, and potential solutions.

A Vision for Academia and Research

We hope this guidebook provides directions in teaching and research across higher education institutions and research centers in Southeast Asia. This guidebook can serve as a reference that can capacitate faculty and researchers to teach and mentor next-generation One Health leaders in conducting more integrated and comprehensive research on zoonoses and the components tightly associated with it, such as pathogens, hosts, environment-animal interface, and food systems. Ultimately, we envision this guidebook to catalyze the continuation of existing and development of new large-funding collaborative research activities involving teams of multi-disciplinary researchers across the region— allowing us in the long term to provide evidence-based and actionable knowledge to close the gap between One Health education, research, and public advocacy and policy.

Why do we believe we can achieve this vision for this actor group?

- Academia and research actors in Southeast Asia have a strong shared and revitalized interest in combating the next pandemic, commitment to solutions, and conscience for ecosystem-human health. This is especially true after the devastating impacts of the COVID-19 pandemic on lives and livelihoods in the region.

- One Health research is a fast-emerging area that can encourage researchers, especially early career researchers, to focus their research efforts and performance. It is also receiving global and regional attention, including opportunities for acquiring research funding.

What are some ways for this actor group to achieve our vision?

- Recruiting local One Health education and research champions who can be trained under tailored capacity-building programs using this guidebook.

- Engaging students and researchers in medical, veterinary, and allied health sciences and those in related fields (e.g., agriculture, sociology) in One Health education and training for the region.

- Using the guidebook to identify and set core One Health educational competencies, from primary education (e.g., high school) to higher education (Masters and doctoral studies).

A Vision for Civil Society Groups (CSGs) and Non-governmental Organizations (NGOs)

We hope this guidebook can serve as a comprehensive reference to develop Information, Education, and Communication (IEC) tools and approaches for CSGs and NGOs, especially those working with key One Health actors (e.g., farmers, wet market workers, natural resource-based workers). We believe this guidebook can facilitate extension service programs to introduce fundamental concepts of One Health and allow local and community-based actor groups to reflect on their relationships and roles in the animal-human-ecosystem health interface. We also envision this guidebook to enhance cross-sectoral and cross-organizational collaboration for One Health among CSGs and NGOs by providing key contacts on which actors are relevant for which component of One Health (i.e., "Who are the appropriate actors to talk to about particular topics?").

Why do we believe we can achieve this vision for this actor group?

- CSGs and NGOs in Southeast Asia are trusted messengers of knowledge and have been historically passionate about initiating positive changes in the local communities they work with. This role was particularly heightened with the impacts of the pandemic when these local communities suffered severe economic consequences, and existing relationships with CSGs and NGOs became essential channels of communication and support.

- Several funding and other emerging opportunities for One Health now require strong community-based engagement, so relationships built by CSGs and NGOs are becoming increasingly critical.

What are some ways for this actor group to achieve our vision?

- Engaging CSGs and NGOs in training programs, especially working with them on developing IEC tools and materials (e.g., videos, flip charts, and other forms of audio-visual aids) that

can translate key messages of this guidebook into versions appropriate and tailored for the actor groups they work with.

● Using this guidebook to guide the development of training manuals tailored for CSGs and NGOs in the region, especially for the Training of Trainers of potential local champions of One Health

A Vision for National Governments and Regional Bodies in Southeast Asia

We hope this guidebook can pave the way for deep reflections among decision-makers in relevant state ministries and departments to take ownership and accountability of the problems relevant to One Health. This guidebook contains important cases and experiences in Southeast Asia that can empower national governments and regional policy institutions to lead executive measures and advocate for legislation that will address problems on foundational drivers of a pandemic, financing, community engagement, and locally relevant solutions. We envision that this guidebook opens ideas for national governments and regional organizations to develop and implement programs that invest in human and ecosystem health co-benefits. Ultimately, we hope this guidebook leads to collaborative leadership for One Health, where relevant state-level offices and regional organizations have clear roles and responsibilities.

Why do we believe we can achieve this vision for this actor group?

● National governments in Southeast Asia aspire for and are well-positioned to take global leadership, especially in hopes of leaving positive legacies on achieving the United Nations 2030 Agenda for Sustainable Development (SDGs). Prioritizing One Health is an emerging convincing approach that tackles this multidimensionality of sustainable development.

● Experiences during the pandemic have heightened awareness among citizens and communities to demand accountability and call to be proactive on One Health leadership from national governments. The call to action from the Quadripartite (a consortium of four leading international organizations, WHO, WOAH, FAO, and UNEP) and its associated One Health High-Level Expert Panel (OHHLEP) has further accelerated this positive change toward invigorating One Health efforts.

What are some ways for this actor group to achieve our vision?

● Engaging decision-makers in national governments and regional policy institutions to co-develop national implementation strategies to operationalize the contents of this guidebook in the form of potential laws and executive memos, especially tailoring it to the country's changing needs.

● Using the cases and recommendations of this guidebook to reflect on power dynamics among national ministries and departments and develop a national and regional strategy for better inter-organizational collaborations (i.e., "how can we synergize our One Health efforts across ministries and departments toward a common goal)."

A Vision for Local Governing Bodies

We hope that this guidebook heightens the sensitivity of local (i.e., subnational) governments in understanding their roles, goals, interests, and power over issues in One Health. We believe this guidebook can provide the knowledge for local decision-makers to carefully identify the complex

problems in their communities. By mapping the complexity of the problem, they can formulate One Health solutions that will proactively account for potential unintended consequences and offer corrective measures. We believe that decision-makers capacity for such holistic and forward-looking thinking can more efficiently balance competing needs among different local actor groups, given the local government's usually shorter policy cycle period and limited resources. We also envision that the knowledge from this guidebook can inspire local decision-makers to lead community-based monitoring and evaluation of critical indicators to combat disease spillover.

Why do we believe we can achieve this vision for this actor group?

- The role of local governing bodies has been proven critical, especially with the recent experience of managing the COVID-19 pandemic. Performance on One Health relevant issues has become central to public perception─ shaping prestige, legitimacy, and potential re-election for several local positions.

- Local governance in Southeast Asia is gaining empowerment, opening opportunities for local actions and regulatory measures to be more critical in identifying and addressing One Health issues and agenda.

What are some ways for this actor group to achieve our vision?

- Engaging champions among local governing bodies in the region to explore the operationalization of this guidebook, including potential funding incentives, resource sharing, and allocation, and network building to exchange local experiences and cases.

- Translating the guidebook into digestible forms (e.g., videos and illustrations) that local governing bodies can use as easy and accessible reference in their daily local governance.

A Vision for the Private Sector and Industry

During the workshop, we also briefly explored our vision of the potential use and implementation of this guidebook for the industry in Southeast Asia. However, unlike the other actor groups, we did not dive deep into this aspect. We lacked full representation from private sector and industry actors who could provide more in-depth ideas in our envisioning process.

We hope that this guidebook can guide industry leaders and private actors to know where to invest, especially the knowledge about the economic implications of breeding certain livestock under specific spatial-temporal patterns of infectious diseases important for disease spillover. We hope this guidebook can support a better understanding of the different regulations and guidance relevant to One Health, such as wildlife trade, farming, and food preparation. We believe the cases and examples in this guidebook can help industry actors better prepare for future uncertainties, as was the case of the COVID-19 pandemic, that can have profound economic implications on the industries in the region. More importantly, we envision this guidebook to heighten awareness and eventual actions for critical issues in which the private sector serves as essential direct or indirect drivers for a potential disease spillover, such as food safety, wet markets regulation, dynamics between global market needs, and local production.

Proposals for Knowledge Dissemination

We reflected on the possible approaches to how knowledge from this guidebook can be disseminated to the public and across relevant actor groups. These are simply examples of how we, as authors, can think about potential communication channels within the organizations we represent

or networks we belong to. We recommend tailoring knowledge dissemination approaches based on the audience and critical messages.

- Distribution of the guidebook to libraries, medical and veterinary centers, government offices, research centers, faculties, and universities

- Engaging the press and media, including the use of social media platforms

- Tapping One Health Network in the region and national/local One Health organizations

- Circulating along relevant regional and global bodies such as agencies of the United Nations (UN) and the Association for Southeast Asian Nations (ASEAN)

- Conducting educational activities, virtual or in-person, for students, researchers, policymakers across levels, and sectoral actors (e.g., farmers, fisherfolks)

- Presentation at conferences, meetings, and other scientific or social gatherings

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BOX 8-1 Participatory Approach to Co-Develop Collective Visions on the Use and Implementation of the Guidebook

The goal of this participatory approach was to create a shared vision of implementing the guidebook across scales, including the potential facilitating factors of the uptake among actor groups. Several authors of this guidebook, across all modules, participated in this visioning exercise.

Figure 8-5. A multidisciplinary group of experts and researchers collaboratively working together to produce the guidelines on preventing zoonotic spillover.

Before creating the visions of the future use and implementation of the guidebook, we first began our approach by remembering our lived experiences of co-developing the different modules of this guidebook. We divided the whole group into smaller groups of three or four to "remember our past" by sharing: "*What was most memorable in this journey of co-developing your modules*?" Each smaller group then shared a word or a phrase that best represents their journey. The goal of this activity was to allow the participating authors to reflect on their shared efforts in developing the guidebook and create a collective sense of ownership and accountability.

Figure 8-6. The figure illustrates Elson Galang and Eri Togami delivering a presentation on Workshop 5 hosted by INGSA and NASEM at Sunway University in Kuala Lumpur, Malaysia.

We then listened to a brief talk by one of the authors of Module 7 on the different attributes of the guidebook to allow the authors of the other modules to reflect on:

- The cost of adopting the key messages of their module

- The relative advantage and compatibility of their recommendations over the existing practices

- The simplicity of how they presented their respective messages.

- The observability of the potential outcomes and trialability of their recommendations

The goal of this activity was to allow the authors to critically evaluate the way they have written and structured their respective modules, especially what kind of messages and recommendations they are emphasizing that are important to achieve the visions of the guidebook.

FIGURE 8-7. Workshop participants and committee members engage in group discussions, representing multidisciplinary and multisectoral engagement in the Southeast Asian region, to strategize on implementing the guidebook recommendations.

We then divided the whole group into another set of smaller groups— each group representing the following actor groups in the context of the region:

- Academia and Research

- Civil Societies Groups and Non-governmental Organizations

- Local governing bodies (i.e., village to provincial governments)

- National Governments and Regional Bodies

- Private sector and industries

We asked the participating authors to select which smaller group they felt they can contribute to the most.

- Each smaller group discussed: "How would your actor group use this guidebook? Which modules would you prioritize?" Everyone was encouraged to place their ideas and answers in sticky notes and flipcharts. After the discussion, each smaller group shared a summary of their discussion.

- The goal of this activity is to co-imagine how the guidebook can be used by their actor group as leverage to achieve important future milestones to counter zoonosis in the region. The outputs of this activity shaped the actor group-specific visions presented in this Annex.

Participants then went around the room (i.e., "gallery walk") to look at the different outputs, while asking them to reflect and vote using colored stickers on the following questions:

- [Yellow Sticker] Which future use of the guidebook will be the most feasible?

- [Green Sticker] Which will be the most impactful?

- [Orange Sticker] Which will face the most barriers?

The goal of this activity is to allow participants to explore the visions co-developed by other smaller groups and provide insights into the potential of these visions for actual future implementation.

Participants then quietly described their personal aspirations for the guidebook by writing them on a colored sheet. We asked participants on certain colored sheets to share their aspirations for the group. The goal of this activity is to allow the participants to connect their own personal visions to the actor group-specific visions. Outputs of this activity were synthesized to write the general collective vision in this Annex.

Participants were asked to go back to their respective smaller groups to do the "Iceberg Exercise". Participants discussed four questions, each representing a layer of the iceberg:

- Layer 1: Is the guidebook accessible enough so recommendations can be implemented by this actor group? If not, what can make it more accessible?

- Layer 2: Are these actor groups "ready" to get on board? If not, what can facilitate their readiness (e.g., capacity development) for the guidebook?

- Layer 3: What are the inner characteristics of this actor-group that can facilitate the uptake of the guidebook (e.g., vital interests in zoonosis)?
- Layer 4: What is the socio-cultural-political context by which this actor group operates that can facilitate the uptake of the guidebook (e.g., substantial funding)?

At the end of the activity, each group shared a summary of their discussions. The goal of this activity is to allow the participants to carefully think about the feasibility of their visions, including the potential facilitating and hindering factors to achieving these visions. Outputs of this activity were synthesized to write the subsections (i.e., "Why we believe we can achieve this vision" and "What are ways to achieve this vision") of each actor group-specific vision in this annex.

FIGURE 8-8. Participants, committee and staff members pose together at the conclusion of Workshop 5, holding awards in recognition of their collaborative efforts and contributions.

To end the participatory approach, we asked the participants to quietly imagine how they would disseminate the key messages and recommendations they had written in the guidebook. We asked them to write these down in colored sheets, asking some of them to share their thoughts with the whole group. The goal of this activity is to allow the participants to begin thinking of small but doable ways that can contribute to achieving the visions they just co-developed. Outputs of this activity were synthesized to write the proposals for knowledge dissemination in this Annex.