



Mahidol University
Faculty of Veterinary Science

**WOAH Collaborating Centre
for Wildlife Health Surveillance
and Epidemiology**

Reference Centre



World Organisation
for Animal Health

Disease risk management and applied practice in legal and illegal wildlife trade

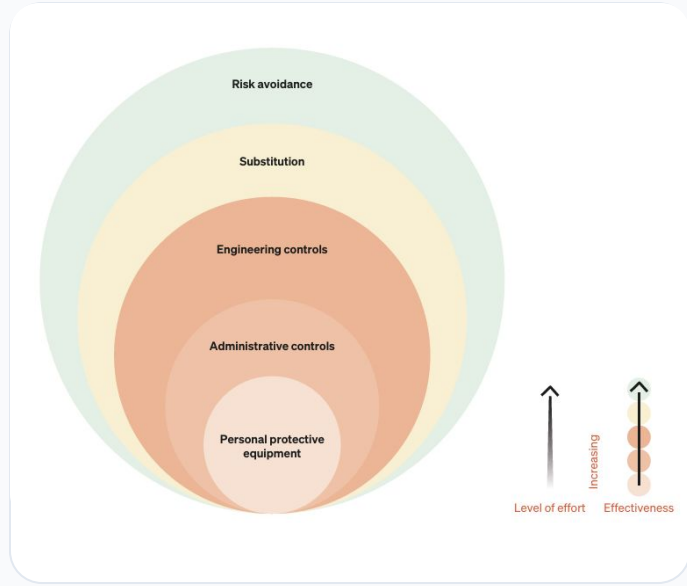
Sarin Suwanpakdee and Anuwat Wiratsudakul,

The Monitoring and Surveillance Center for Zoonotic Diseases in Wildlife and Exotic Animals (MoZWE), and
Wildlife Health Collaborating Center (Founded as Thailand National Wildlife Health Center),
Faculty of Veterinary Science, Mahidol University

Dimensions of Disease Risk Assessment: A Case Study of Wildlife Markets and Supply Chains



Recap: Theory of Risk Management Applied in Wildlife Trade



The Hierarchy of Control

1. Risk Avoidance: To minimise the hazard or remove it from the workplace or setting, such as, limiting or prohibiting the sale of live wildlife in markets.

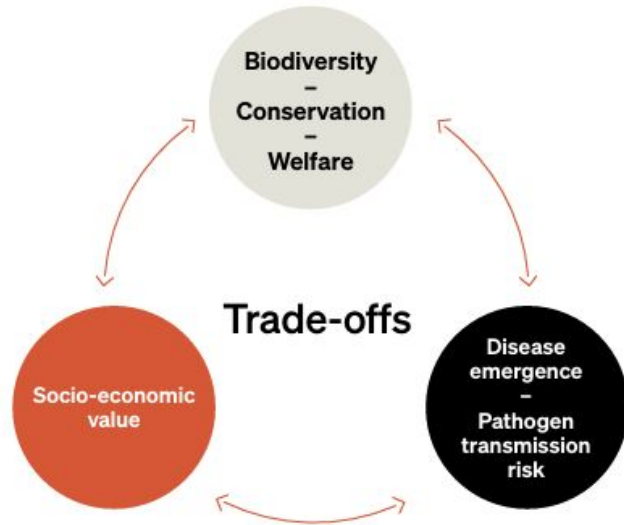
2. Substitution: Ex: A shift to another type of wildlife that has a lower disease risk with risk assessment

3. Engineering Controls: Ex: Using wildlife-specific handling equipment

4. Administrative Controls: Ex: Vaccinating workers against the identified pathogen risks, and integrated strategies for improving hygiene and sanitation

5. Personal Protective Equipment: Ex: Using of dedicated clothing and personal protective equipment (PPE) such as gloves, face shields, and respirators.

Trade-offs in multi-objective decision-making in the management of wildlife trade



Managing wildlife trade disease risks is a challenge with multiple objectives. These objectives may sometimes conflict, in that a gain for one objective may be at the expense of others.

Multi-objective decision-making framework to manage emerging diseases related to wildlife trade

	Low disease emergence risk/ pathogen spillover risk	High disease risk emergence/ pathogen spillover risk
Wildlife trade that has low economic and/or socio-cultural value		
Low biodiversity threat	Allow	Restrict, with enhanced sanitary measures and trade standards
High biodiversity threat	Restrict, with enhanced conservation measures	Prohibit
Wildlife trade that has high economic and/or socio-cultural value		
Low biodiversity threat	Allow	Manage, with enhanced sanitary measures and trade standards
High biodiversity threat	Manage, with enhanced conservation measures	Restrict or prohibit, pending further evaluation and additional policy measures

— **Practical examples** —

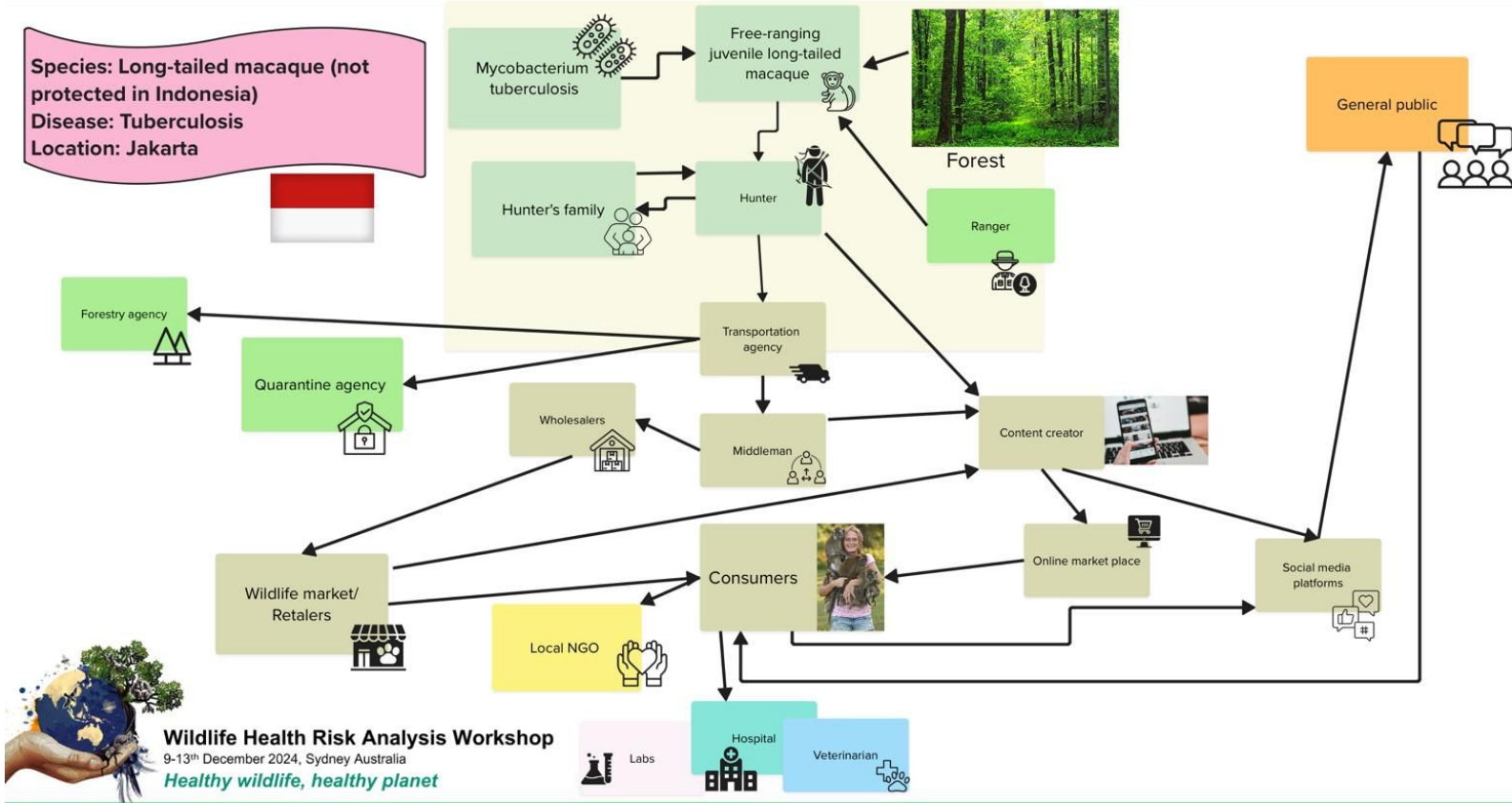
Wildlife Health Risk Analysis Workshop

9th – 13th December 2024, Sydney Australia

healthy wildlife, healthy planet



GROUP 3. Drawing the System for Wildlife Trade



Example

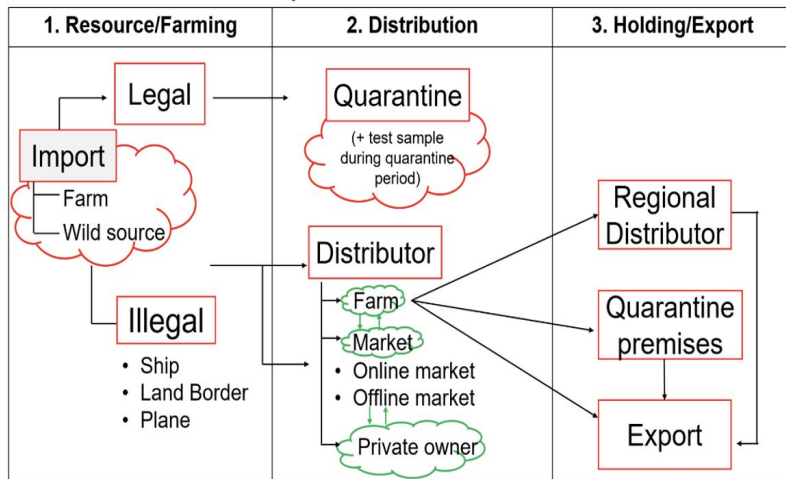
Pilot: WOAH Guidelines for Addressing Disease Risks in Wildlife Trade

Workshop on Prioritization and Stakeholder Analysis

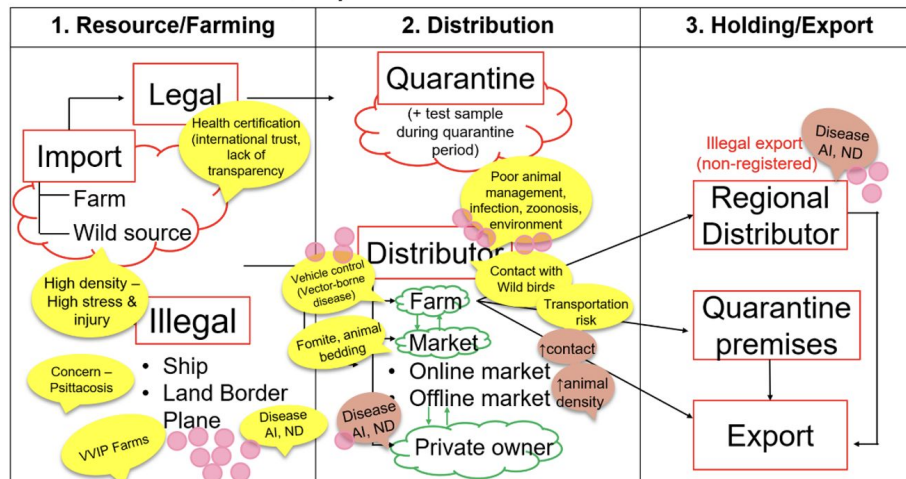
Ascott Hotel - Thong Lor, Bangkok, Thailand

20-21, December 2023

Group 2: International trade of Birds

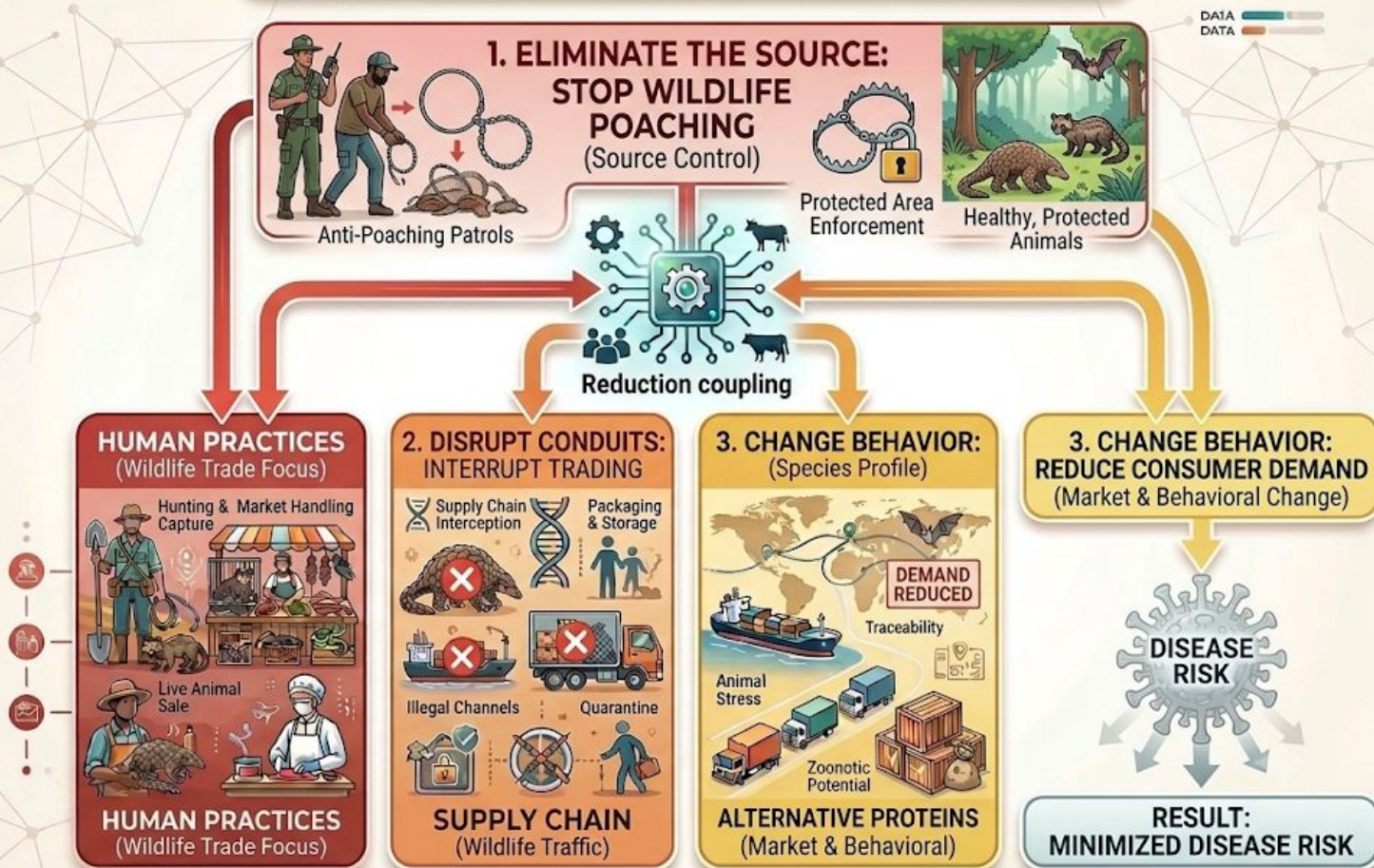


Group 2: International trade of Birds



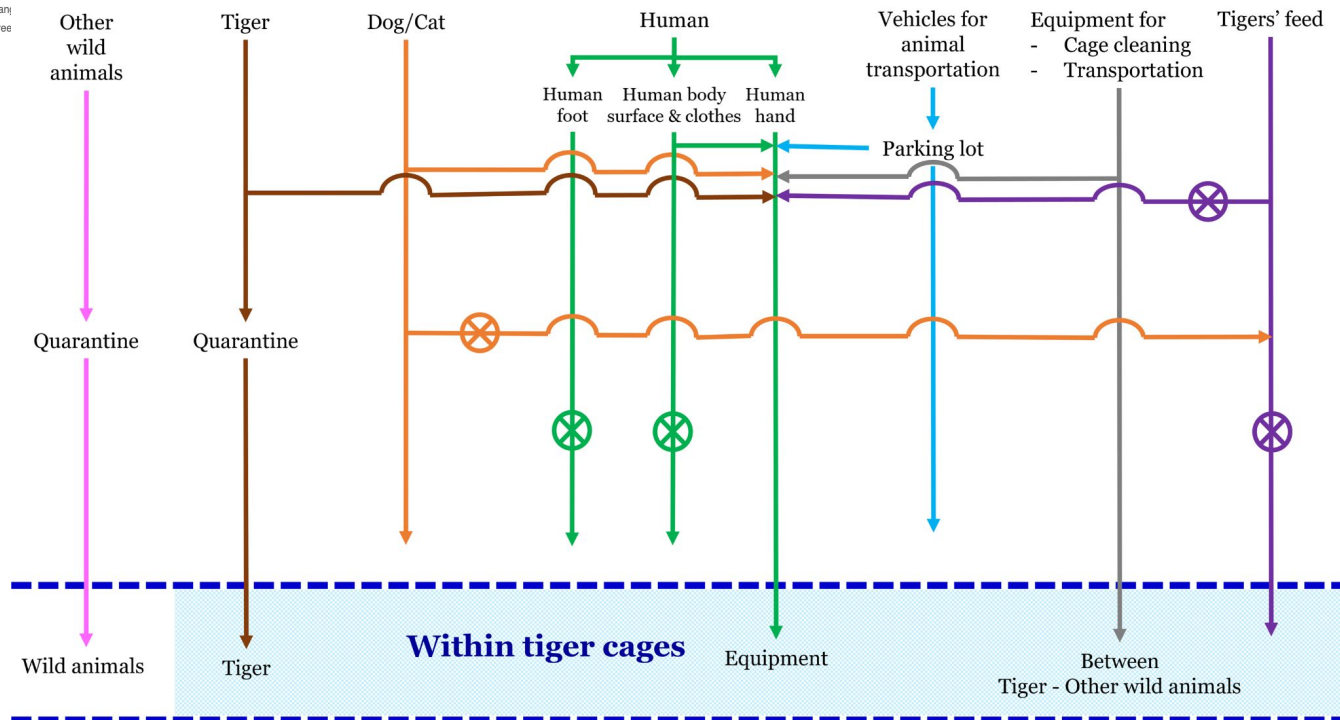
— **Mitigation interventions** —

WILDLIFE TRADE & DISEASE RISK REDUCTION PATHWAY

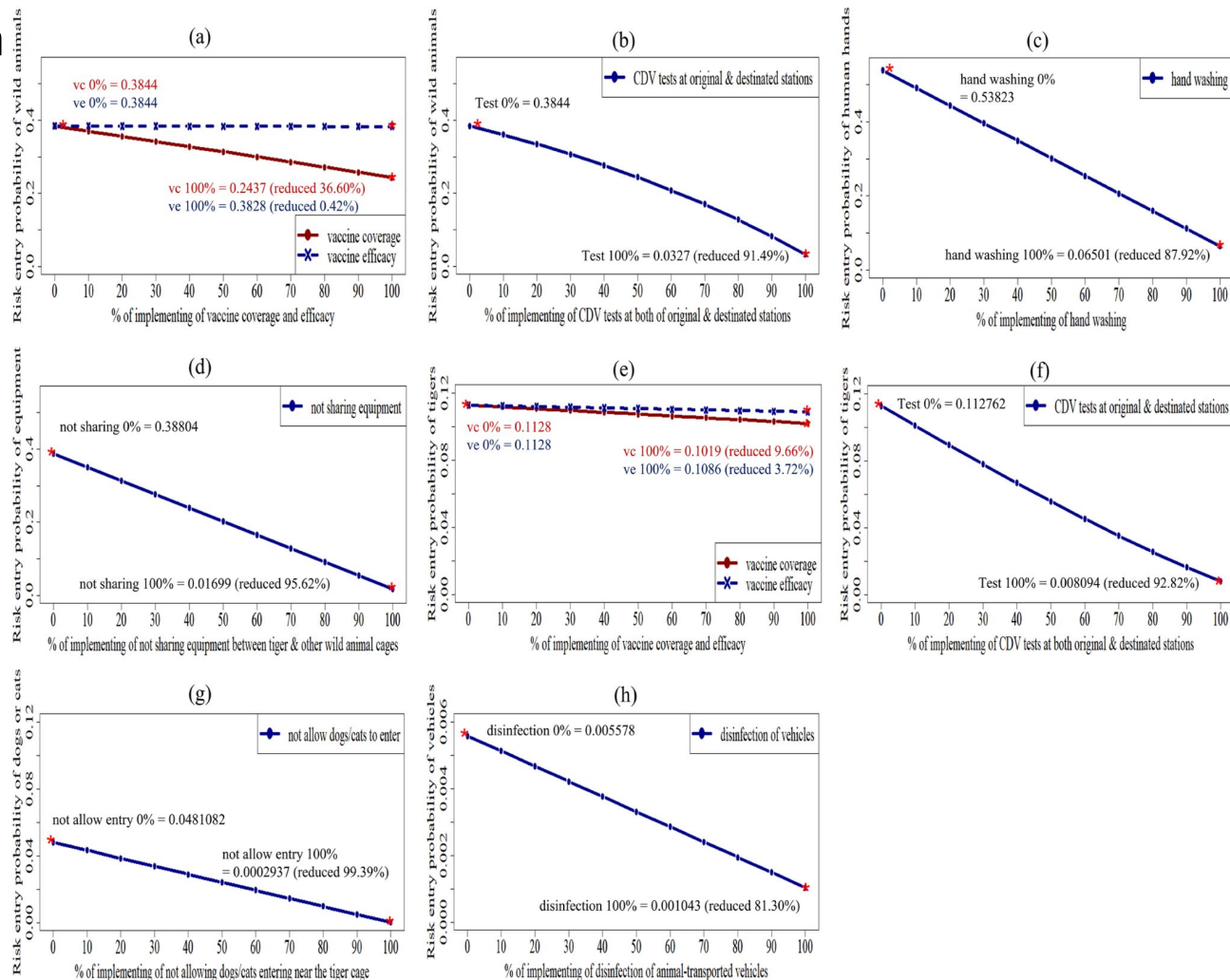


Quantitative risk assessment and interventional recommendations for preventing canine distemper virus infection in captive tigers at selected wildlife stations in Thailand

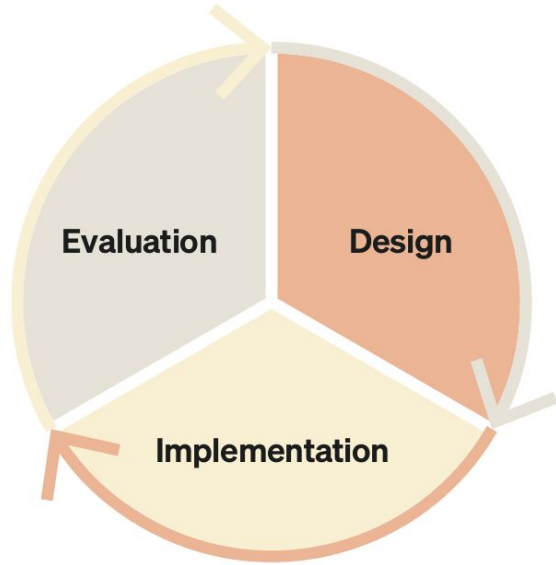
Kanittha Tonchiangsai, Anuwat Wiratsudakul, Suwicha Kasemsuwan, Ruan Weerapong Thanapongtharm, Kan Kiedmanee, Tatiyanuch Chamsai, Naree Pakpoom Aramsirirujwet, Sarin Suwanpakdee



Ex: Risk reduction



Monitoring and evaluation



Phases of the project or policy life cycle

- Monitoring and evaluation involves defining metrics, indicators, and benchmarks to track changes and effectiveness of interventions over time.
- This process guides corrective actions and helps identify any unintended adverse effects of specific measures.
- Regular monitoring and evaluation are crucial for informing the design and implementation of disease risk management strategies, forming a cyclical process.

Challenges & Future Directions

01

Urgent Need & Evidence Gap

Wildlife trade is a major driver of emerging infectious diseases, but there's a critical lack of evidence on *how* to effectively implement and sustain risk reduction interventions.

02

Insufficient Data

Existing research largely focuses on pathogen presence rather than systematic evaluations of intervention effectiveness, acceptability, or sustainability in real-world contexts.

03

Contextual Blind Spots

Studies often overlook the impact of social, epidemiological, and ecological factors, or a complex systems perspective, limiting insights into successful intervention design.

04

Path Forward

Adaptive risk management, coupled with innovation in program implementation and evaluation, is essential to build an evidence base for effective, sustainable disease control.

— Thank you —

