World Organisation for Animal Health

Ministry of Agriculture
Republic of Indonesia

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Cambodia

Biothreat Reduction: Situation update

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Workshop on Biothreat Reduction in South-East Asia, June 2 - 3, 2026

Presentation Outlines

1. Overview of National Mechanism and Governance
2. Legal and Policy Frameworks
3. Current Situation in Biothreat Landscape
4. Laboratory System: Biosecurity, Biosafety, Biorisk Management
5. Laboratory System: Workforce and Training
6. Preparedness and Response
7. Challenges
8. Key Recommendations

1. Overview of National Mechanisms & Governance

Focusing on (peacetime biosafety and biosecurity and emergency management during agroterrorism events)

A. Governance: Cambodia engage of Animal Health Sector, Public Health Sector and Security Sector:

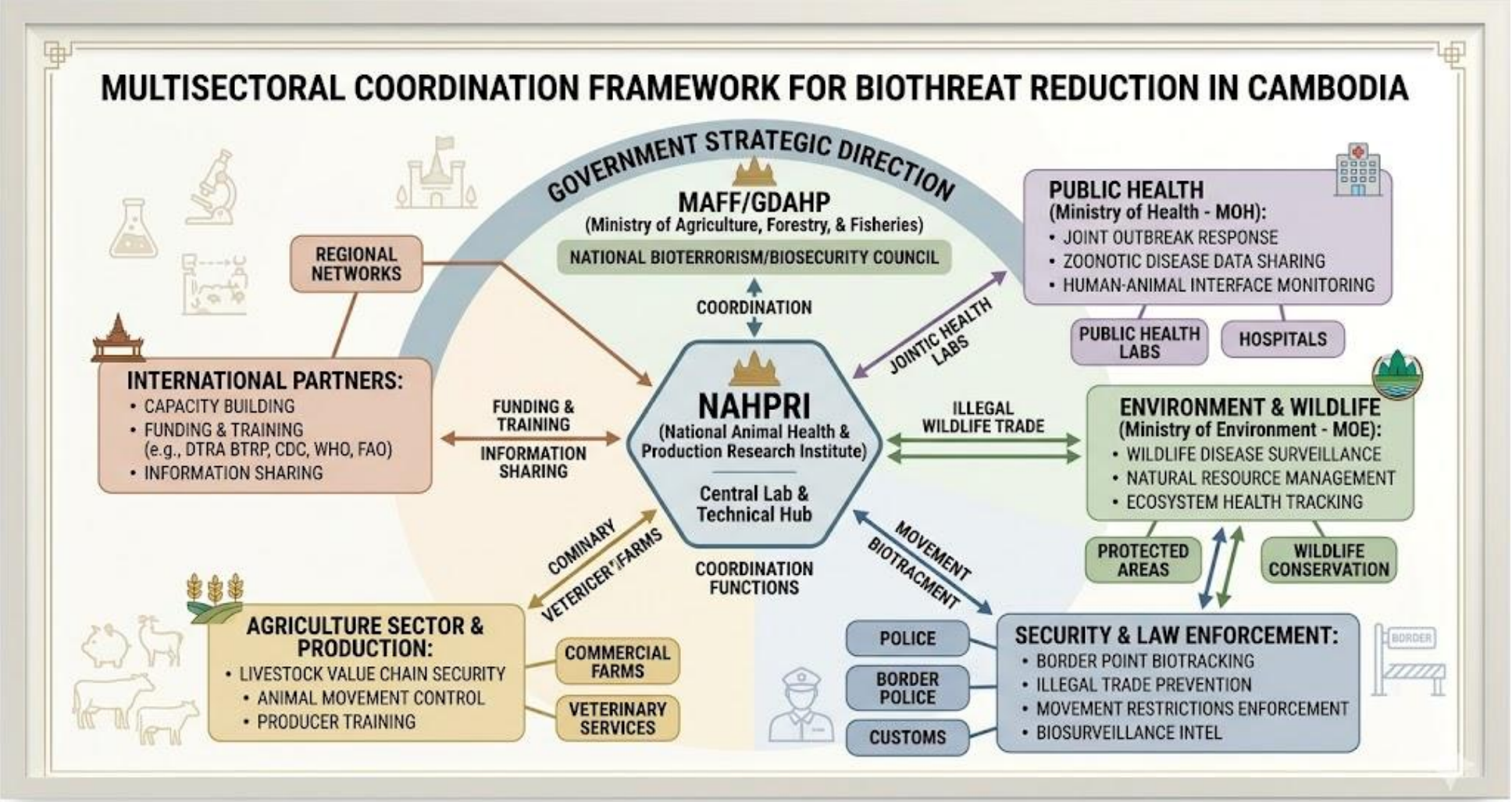
-Animal Health Sector: Ministry of Agriculture, Forestry and Fisheries.
-Public Health Sector: Ministry of Health.
-Security Sector: Ministry of Interior, General Department of Customs and Excise, Ministry of Defense

B. Mechanisms: Whole of Government, One Health

C. Private Sector: Private labs, Waste management: there are some private lab (CP,...), Waste management company (Global Action for Environment Awareness, Cintri...)

1. Overview of National Mechanisms & Governance

Coordination diagram including coordination with security, environment and other sectors



2. Legal & Policy Frameworks

A. Existing laws/regulations /status (review, new development) on bio threat reduction for example:

- **Law on Animal Health and Production**: is promulgated on January 01, 2016

Provides legal framework to:

- Support animal health and production,
- Protect human health, animal health and welfare and the environment,
- Eradicate, prevent and control the spread of animal diseases,
- Strengthen the provision of veterinary services,
- Facilitate domestic and international trade of animals and animal products
- Promote the safe and effective use of veterinary medicines and animal feed

- **Law on the Prohibition of Chemical, Nuclear, Biological and Radiological Weapons (2009)**:
  - Under Articles 8 and 9, Cambodia mandates strict government permission for the acquisition, production, processing, transfer, transport, and stockpiling of any dual-use biological substances or agents capable of being utilized as biological weapons.

2. Legal & Policy Frameworks

A. Existing laws/regulations /status (review, new development) on bio threat reduction for example:

- **Law on Biosafety (2008)**:
  - It is largely focused on the environment and agriculture—specifically regulating risks arising from modern biotechnology, genetic modifications, and Living Modified Organisms (LMOs) to prevent adverse effects on human health and biodiversity.
- **Law on Food Safety (2022)**:
  - It is largely focused on the environment and agriculture—specifically regulating risks arising from modern

2. Legal & Policy Frameworks

B. Roles of regulatory authorities

-National Authority for the Prohibition of Chemical, Nuclear, Biological and Radiological Weapons (NACW):

+ It holds exclusive power to collect data, conduct assessments, and issue mandatory government permissions for anyone seeking to possess, process, transfer, transport, or stockpile biological agents that could potentially be weaponized.

-National Institute of Public Health (NIPH)_Ministry of Health (MOH):

+ Acts as the technical arm for the MOH, supporting the implementation of international standards like the World Health Organization's (WHO) International Health Regulations (IHR 2005) and managing baseline pathogen tracking during outbreaks.

2. Legal & Policy Frameworks

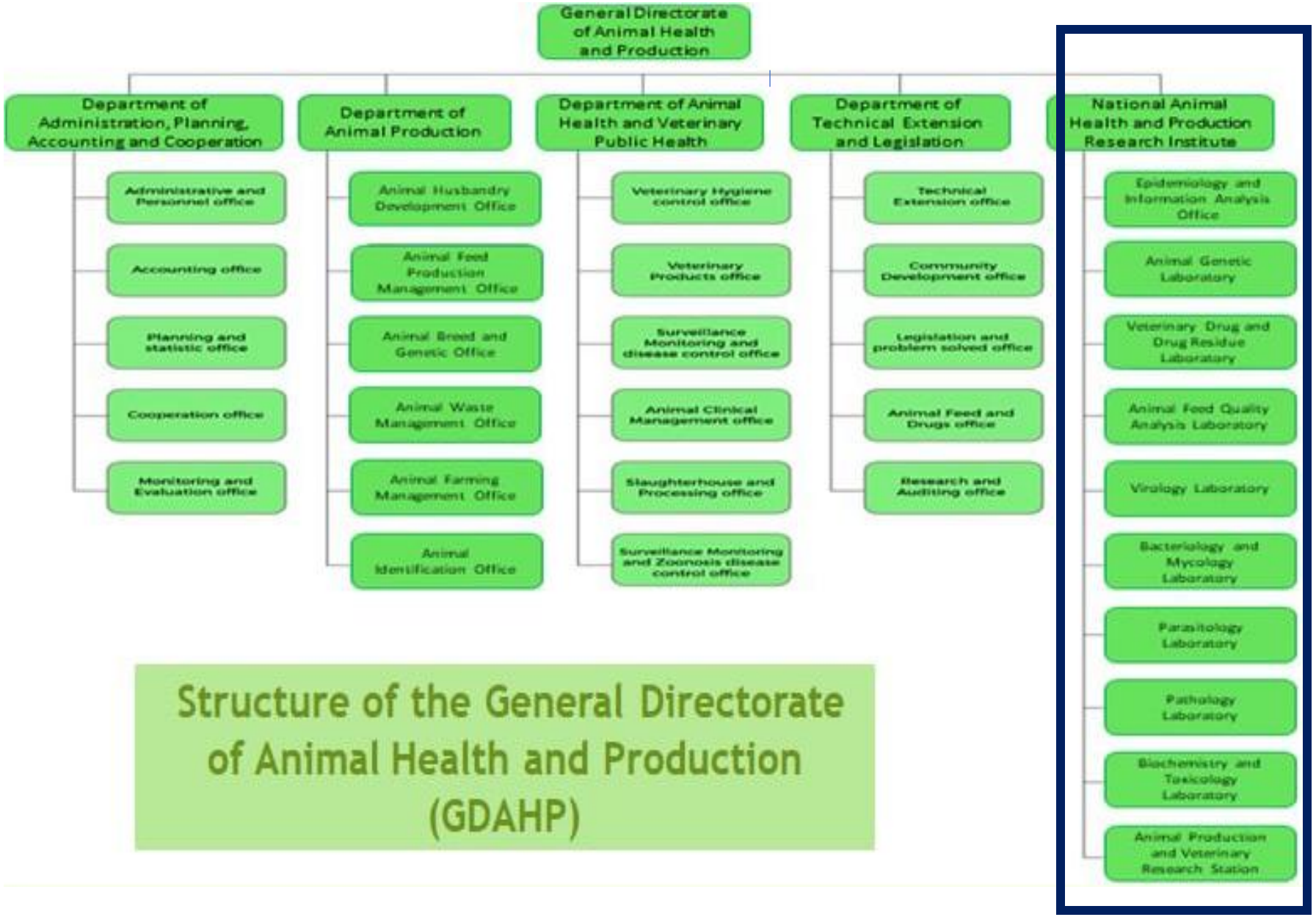
B. Roles of regulatory authorities

-Ministry of Environment (MOE): Governs environmental biotechnology and ecological risks.

- National Animal Health and Production Research Institute (NAHPRI), General Directorate of Animal Health and Production (GDAHP)_ Ministry of Agriculture, Forestry, and Fisheries (MAFF)

Background of NAHPRI

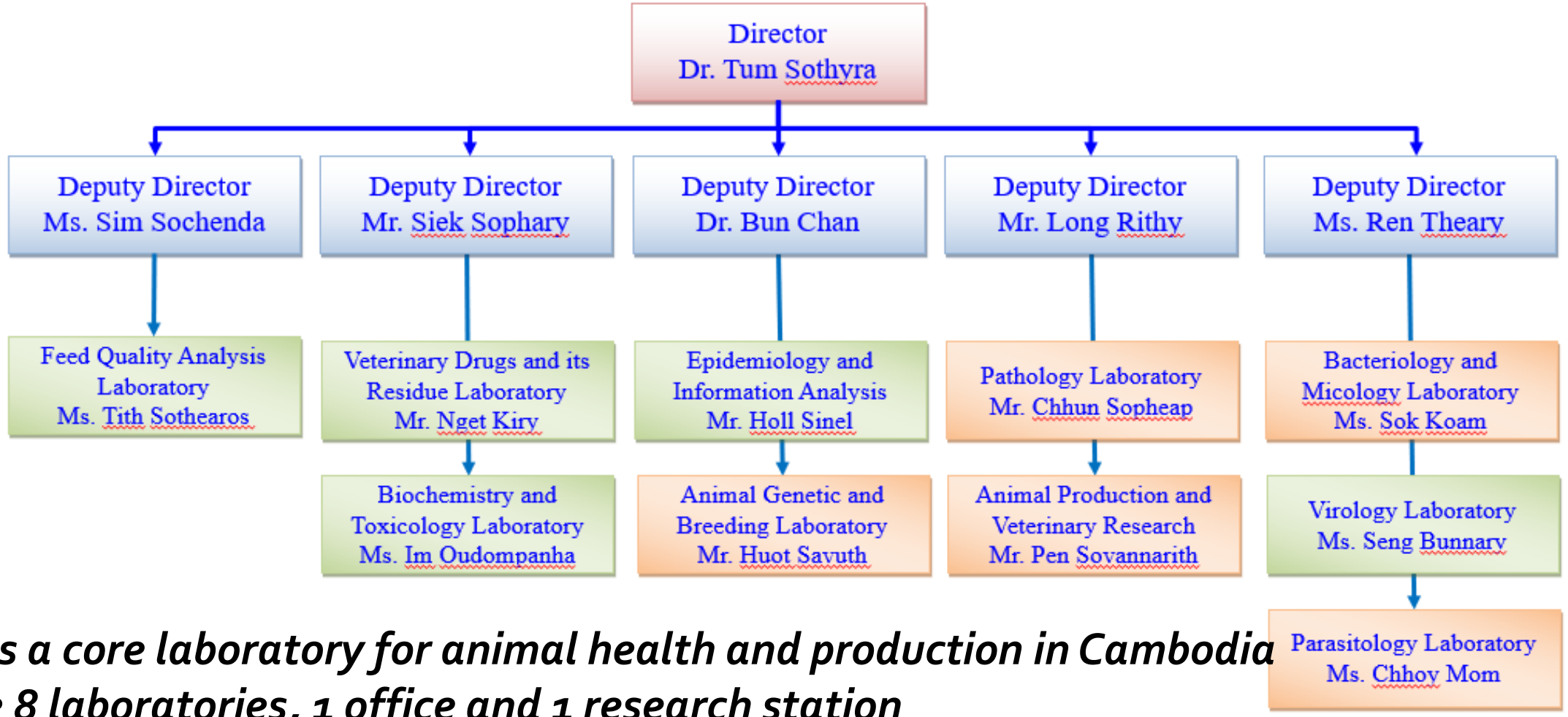
- *The National Animal Health and Production Research Institution (NAHPRI) is a Cambodian government institute under General Directorate of Animal Health and Production (GDAHP), Ministry of Agriculture, Forestry and Fisheries*



Structure of the General Directorate of Animal Health and Production (GDAHP)

Background of NAHPRI

Organizational Chart
of National Animal Health and Production Research Institute (NAHPRI)



- *NAHPRI is a core laboratory for animal health and production in Cambodia*
- *There are 8 laboratories, 1 office and 1 research station*

Roles and responsibilities of NAHPRI

- The mandate of NAHPRI is to promote research and provide services on animal health and production, and food safety.
- Our research involves epidemiology of animal diseases (infectious diseases, zoonoses, parasitic diseases, diseases caused by biological and chemical substances, food-borne)
- We act as a national reference laboratory for diagnosis of animal diseases, analysis of the quality of veterinary drugs and feed, analysis of chemical residues in animals and animal products and animal genetics and breeding.

Animal health activities



Animal production activities



ASF outbreaks














2. Legal & Policy Frameworks

C. Harmonisation of Cambodia with ASEAN/WOAH/WHO guidelines

Alignment with:

-WOAH standards

-WHO standard

-ASEAN biosafety, biosecurity initiatives.

3. Current Situation in Biothreat Landscape

- Key biological risks (zoonoses, TADs, lab-associated risks or other emerging issues)

+ Highly Pathogenic Avian Influenza (HPAI H5N1)
+Rabies
+Anthrax
+Japanese Encephalitis
+African Swine Fever (ASF)
+Food and Mouth Disease (FMD)

3. Current Situation in Biothreat Landscape

- National priority areas:

+Multi-sectoral action plan on Antimicrobial Resistance in Cambodia 2025-2029

+ National Strategic Plan for Animal Health Laboratory 2024-2030

Multi-sectoral action plan on Antimicrobial Resistance in Cambodia 2025-2029

Goal:

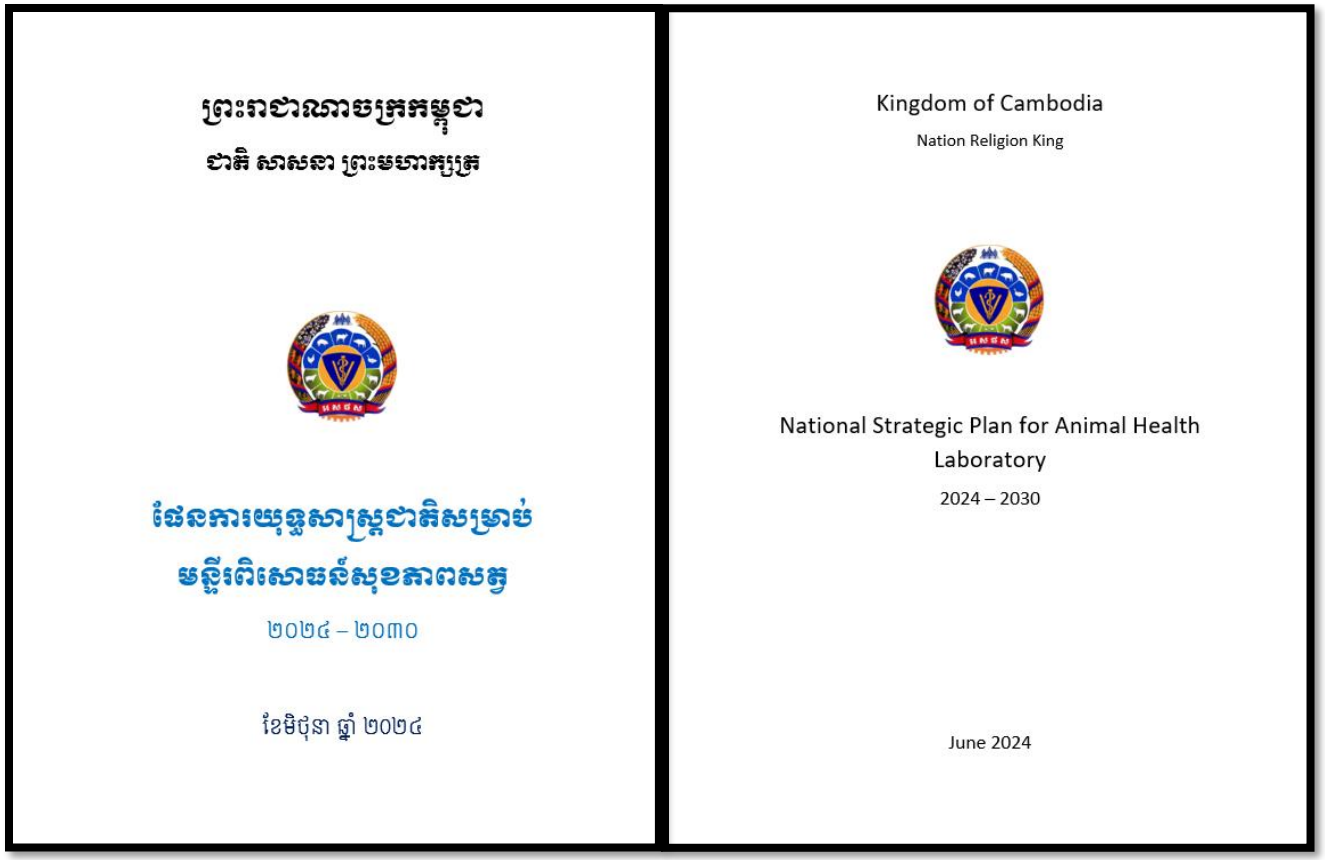
The Multi-Sectoral Action Plan envisions a country with a healthy population and robust governance systems, working collaboratively to prevent and control the threat of AMR, a crucial step towards achieving health security, and the sustainable development goals across human, animal, food, and environmental health sectors.



National Strategic Plan for Animal Health Laboratory 2024-2030

Objective

The purpose of this document is to define the direction and overall goals of NAHPRI to ensure that the laboratory is meeting the needs of animal health in Cambodia. Additionally, the strategic plan will provide a clear action plan outlining a stepwise approach to achieving each strategic goal, the budgetary requirements and a process for monitoring and evaluating the laboratory's progress in executing the strategic plan.



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Kingdom of Cambodia

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National Strategic Plan for Animal Health Laboratory

2024 – 2030

June 2024

Strategic goals

Biosafety and Biosecurity: Biosafety and Biosecurity help ensure the safety of personnel and the environment. Biosafety addresses the safe handling and containment of infectious and hazardous biological materials. The goal of biosafety is to reduce or eliminate exposure of lab personnel, the community, and the environment to potentially infectious or hazardous agents. Biosecurity is managing risks to human health, animal health and the risks to the environment. It is based on recognition that hazards have the potential to be deliberately or accidentally misused resulting in harm. Laboratory biosecurity is a set of processes used in laboratory facilities to protect agents from loss, theft, or intentional misuse.

Challenge	Actions

• Age of facility
• Cost of maintaining a robust biosafety / biosecurity program
• Disposal of wastewater
	• Develop a biosafety / biosecurity plan sufficient for current activities.
	• Implement biosafety / Biosecurity plan ensuring proper:
	  ○ Waste disposal
	  ○ Availability and use of PPE
	  ○ Certified and maintained biosafety cabinets.
	  ○ Sufficient laboratory security
	  ○ Proper handling and storage of biologic agents
	  ○ Appropriate training of all personnel

4. Laboratory System: Biosecurity, Biosafety and Biorisk Management

A. Laboratory Network Overview

- Current lab capacities

+PCR

+ELISA

+Direct smear, different types of stains, Sedimentation technique, Floatation technique, Digestion method

+ Bacterial culturing, biochemical and serological testing, Antimicrobial Susceptibility Testing.

+ Veterinary Drug Residue Analysis

-**BSL facilities**: National Animal Health and Production Research Institute (NAHPRI) implement Biosafety Level 2 (BSL-2) , accreditation status: not yet accredited.

- **Inventory control & pathogen management**: Inventory system exist but not fully standardized (LIMS, PACS)

4. Laboratory System: Biosecurity, Biosafety and Biorisk Management

B. Biosafety & Biosecurity Practices

-SOPs:

+ implement of uniform and harmonize SOPs across all NAHPRI laboratories.

-risk assessments:

+ risk assessments are conducted, but not routinely updated.

-PPE & engineering controls: are available and implement in NAHPRI.

-Biosecurity:

+Physical security

+Personnel reliability

+Laboratory information management systems (LIMS) against unauthorized access or cyber threats.

+Sample tracking and control

5. Laboratory System: Workforce & Training

- **Training programs**:
  +Continue professional training related to biosafety in laboratory.
- **Partnerships for capacity building**: cooperation with WHO, WOAH, IAEA, FAO, ASEAN, JICA.....

6. Preparedness & Response

- **Biothreat/laboratory risk assessment :**
  +Laboratory risk assessment at each laboratories.
- **Risk management and risk communication:**
  +National level: National Committee for Disaster Management (NCDM).
- **Trainings:**
  +Locally and Internationally (Australia, Thailand).
- **Modelling, any research studies:**
  +Disease surveillance for HPAI, Rabies, AFS.
- **Cross-sector surveillance and information / data sharing:**
  +Information sharing with MOH, General Directorate of Forestry and Wildlife.
- **Cross-border coordination:**
  +Bilateral meeting with bordering countries: Thailand, Lao and Vietnam.
- **Regional/International Engagement:**
  +Collaboration with WOAH, WHO, ASEAN, IAEA.

7.Challenges

- **Multisectoral Coordination:**
  + Existing but not clear mechanism for coordination.
- **Biosafety/biosecurity capacity building**:
  +Need more training on biosafety. Depend on international partners for technical training and workshop.
- **Policy and Legal frameworks**:
  +Existing guideline, but limited practical.
- **Governance**:
  +overlapping mandates among agencies (ministries).
- **Operational & Resource Constraints**:
  + Budget limitation, infrastructure gap (narrow space, waste system), not yet available BSL-3 laboratories.

8. Key Recommendations

- Strengthen One Health Coordination Mechanism.
- Enhance laboratory capabilities related disease diagnostics, AMR testing, biosafety and biosecurity,and quality management system.
- Strengthen collaboration with bordering countries and regional.
- Capacity building for detecting veterinary drug residue to reduce Antimicrobial Resistance (AMR)
- Enforce strict AMR control.

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Thank You