



GOVERNANCE

**STRUCTURE**

- Ministry of Environment and Natural Resources
  - Overall plan for biodiversity at the national level
  - List of endangered, precious and rare species
  - Prevent invasion of exotic species
- Ministry of Agriculture and Rural Development (MARD)
  - Department of Animal Health (DAH)
    - Specify protection of wild species banned from exploitations
    - Assist govt in state management of forestry + wildlife
    - Disease control in wild animals
- Sub-Department of Animal Health, Vietnam (SDAH)
- National Animal Health Office (NAHO)
- National Centre for Veterinary Diagnostics (NCVD)

**POLICY**

- Not specific
- Strategic plan for wildlife health is in planning
- Need to identify country priorities, SWOT analysis, and create national wildlife strategy @ road map

**LAW**

- Not specific for wildlife health
- Existing laws cover disease control for terrestrial and aquatic wildlife, zoonotic disease risks related to wildlife trafficking, prohibition of import of wildlife, wildlife rearing practices, and wildlife conservation
- Law on Veterinary Medicine (2011)
- Law on Forest Protection and Development (2004) and the Forest Law (2017)
- Law on Biotechnology (2008)
- Criminal Code (2017)
- Directive No. 24/CT-TG (2002) on a Number of Urgent Statutes for Wildlife Management
- Need to develop specific regulations for wildlife health
- Need a circular for wildlife health management to support for budget request and development of SOPs and Guidelines.

**SOP/GUIDELINES**

- No available guidelines/SOPs
- Drafting of SARS-CoV-2 surveillance in wildlife with WCS in progress
- International guidelines may not be appropriate for local contexts
- Need to develop SOPs and guidelines adapted to local contexts
- eg. SOPs for wildlife disease outbreak investigation and control, wildlife slaughter

COLLABORATION

**COLLABORATION & OH**

- Good multi-sectoral collaboration but is more focused on zoonotic animal health rather than wildlife
- Need stakeholders to better comprehend their roles
- Need to increase awareness and knowledge on wildlife among stakeholders
- Suggestion to create legislation to involve forest rangers, forest departments, communities for disease surveillance in wildlife

**Wildlife Health Network**

• Involves DAH, DUEA, FAO, and WCS

**One Health Partnership (OHP) Plan 2021-2024**

- Goal: minimizing the risk of future pandemics
- Function: The plan is considered as a guideline that provides basic information on human and animal health issues, lessons learned from the National One Health Strategic Plan for Zoonotic Diseases (2016-2020), analyzes gaps in multi-sectoral management, operation, and coordination, and proposes specific activities and programs using the OH approach in fighting zoonoses and limiting the further occurrence of zoonotic diseases.

**Official network**

- 3 ministries
  - Ministry of Agriculture and Rural Development (MARD) - OH
  - Ministry of Health (MOH)
  - Ministry of Natural Resources and Environment (MONRE)
- 29 national and international development partners
- Support of European Union (EU)

The plan highlights wildlife health:

- Threats of zoonotic pathogen risks across borders/continents through wildlife trafficking, migratory species, and a poorly regulated wildlife farming industry
- Active surveillance was coordinated for specific zoonotic diseases among forest wildlife and other natural species (bat droppings)
- Emergence/emergence of diseases through encroachment of nature areas

**Activities**

- High level OHP Annual Forum
- Technical Working Group (TWG) - Pandemic WG, Food Safety WG, Companion Animals WG, From research to the WG, ASR WG, Wildlife WG (Department of Animal Health, CITES, Forest Protection Department)
- Policy and Technical Research Groups for specific assignments (eg. OH Communication Network)



**EDUCATION**

- Universities**
- Monitoring and Surveillance Center for Zoonotic Diseases in Wildlife and Exotic Animals (MCSWEA)
  - Faculty of Veterinary Science (FVS), Minh Duc University
  - Faculty of Forestry, Kasetsart University

**INTERNATIONAL**

- FAO - Health Management System support
- WCS - surveillance and funding
- CITES - frequent collaboration
- TRAFFIC
- DEEP VIZN (USAID)
- Stop Spillover (USGS & Tufts University)
- Zoonotic Disease Integrated Action (ZODIA); (FAO)

**LOCAL**

- Community
- Forest rangers
- National Parks
- Rescue Centers

SUPPORT SYSTEM

RESOURCES

**FINANCIAL**

- Limited funding. No allocation for disease surveillance in wildlife. Most funds are for livestock and poultry
- Most funding from NGOs
- Some funding from international organizations (FAO and WCS)
- Unavailable funding for emergencies

**PHYSICAL**

- Less equipped for wildlife as compared to livestock/zoonotic animals

**HUMAN**

- Limited staff members
  - All are in DAH
  - Lab technicians

**ANIMAL HEALTH**

- Heavily rely on DAH
- Wildlife health clinics are unavailable
  - Department of Animal Health
- Subdivision related to wildlife health:
  - Department of Animal Health
- Other organizations:
  - National Parks (under DAH)
    - some international parks have vets
  - Zoo (under DAH)
  - Rescue centers - lack reporting
  - National Institute for Veterinary Research
    - new tests for wildlife but mostly for research
  - Universities (minimal role)
    - limited to only teaching
- No vaccination for wildlife
  - Rescue centres and zoos are independent on their drug usage
  - Infectious disease must be reported to the government, however these are often reported to local vets instead
  - Poor reporting practices of non-DAH vets
  - Need improved reporting practices of non-DAH vets

**ANIMAL WELFARE**

- Under Veterinary laws, but enforcement is lacking
- Captive wildlife farms of several hundred species
  - Regulation of hygiene practices and animal welfare in process and warrants collaboration
- Need stronger enforcement of existing regulations on animal welfare

TECHNICAL

**SURVEILLANCE**

- Currently, no ongoing surveillance activity but there are future plans (working with FAO and WCS on wildlife surveillance)
- Plans to focus on captive wildlife farms rather than focus in the wild
- Need consistent and more complete surveillance program for wildlife
- FMD surveillance - consistent for livestock
- H5N1 surveillance - not continuous

**Disease-Specific**

- Hendra virus
- Fluorin
- Panayirjevirus
- SARS-CoV-2 (wildlife farms)

**Only in livestock and/or humans**

- Foot and Mouth disease
- Avian
- Bird Flu
- Rabies

**Species-specific**

- Antelopes
- Sats
- Civets
- Deer
- Pangolin
- Rat
- Wild Birds

**LABORATORY**

- DAH has eight labs, three of which are working on wildlife (with WCS and FAO). No separation between wildlife and livestock lab
- Limited lab capacity. No SOPs for disease detection in wildlife and for unknown pathogen
  - Except if previously conducted on domestic animals
- SOPs of external collaborators are not continued once project ends
- Need to improve lab capacity
- Need sustainable surveillance program (eg. response)

**Accreditation**

- Proficiency test with Geelong Australia or Hong Kong
- Assemble to organize internal proficiency test
- National Center for Veterinary Diagnostic, Ho Chi Minh as reference lab

**Cold-chain system**

- Equipment available for all the ES districts and provinces

**DATA**

- Database not established due to limited information on wildlife available
- Electronic reporting system (web-form) called WAHIS-Vietnam for domestic animals
  - Plans to develop new component specific for wildlife disease
- International collaborators provide processed reports instead of raw data

**RISK ANALYSIS & ZOOONES**

- Department of quarantine conducts risk analysis during import and export
- High-risk interfaces
  - From nature to farm to market to restaurant
  - High risk for coronavirus
  - More high-risk interfaces are being identified by some NGOs (in progress)

**REPORTING**

- No early warning system
- No mandate or formal agreement with forestry rangers and veterinarians on reporting of diseases
- Projects from WHO and WCS to foster collaboration between forestry rangers, vets, and public health sector
- Follows WOAHP guidelines on wildlife health reporting
  - WAHIS-BETA - needs training of respondents
  - Do not include aquatic diseases

**RESPONSE**

- Difficult to collect carcasses and collect samples for disease investigation due to the laws

OTHERS

**ENVIRONMENT**

- Limited considerations for environment in relation to wildlife health
- Environmental laws are more focused on management rather than wildlife health

**ASSESSMENT**

- Not discussed

**TRAINING**

- Academia inactive in wildlife health services
- Veterinary graduates are not fully-capable to work on wildlife health without training
- Need training for self-graduates
  - Need training on
  - Wildlife disease outbreak investigation
  - Diagnosis for priority diseases
  - Risk assessment for wildlife disease
  - Encourage virtual forums, workshop, and training to support WVN in the regions

**TRACEABILITY**

- Technology for traceability are for research

**COMMUNICATION**

- Broad and general communication on protecting wildlife and biodiversity