

STRUCTURE

- Ministry of Agriculture and Forestry (MAF)
 - Department of Forestry (DOF)
 - Investigate and report wildlife morbidity/mortality events in protected area
 - Inspection: wildlife morbidity/mortality events in wildlife trade, wildlife confiscation, wildlife farms
 - Department of Livestock & Fisheries (DLF)
 - National Animal Health Laboratory (NAHL)
 - Department of Aquatic and Wildlife management
- Ministry of Health (MOH)

POLICY

- No specific mandate/policy on wildlife health
- Wildlife health is not emphasized in Article 5 on Policies on Wildlife and Aquatic of the Aquatic and Wildlife Law 2007
- Refers to CITES
- Inadequate policy backing and awareness on the importance of wildlife health

LAW

- Wildlife health is mentioned in management of captive wildlife and is further expanded in 2024 with new amendments in the Aquatic and Wildlife Law 2007 which include notification and release, surveillance, prevention, and control of disease
- No clearly defined legislation on wildlife health for non-captive wildlife
- The Aquatic and Wildlife Law 2007 and amended 2024 (Mineral Decree no. 018/MAMF on the Establishment and Management of Zoos, Wildlife Farms, Wildlife and Wild Plant Establishment and Breeding Centers, and Executive Decree no. 346 on the Management of International Trade in Aquatic Animals, Wild Animals and Endangered Wild Plants.

SOP/GUIDELINES

- National SOP for Wildlife Health Surveillance in Lao PDR in 2019



COLLABORATION & OH

Activities

- Currently integrating wildlife and environmental health into OH through the National Strategy for OH (ongoing policy draft)
- National One Health Symposium

Official committees/network

- National Wildlife Health Surveillance Committee

- Budget limitations to support activities - heavily reliant on funding from development partners (eg. WCS, IFL, LOMWRU, NAF)
- Needs to improve clarity on roles and responsibilities of agencies
- Needs meetings
- Sharing of information
 - Annual One Health Symposium
 - World Wildlife Health Day

RESEARCH

- Wildlife Conservation Society (WCS)
- Institut Pasteur du Laos (IPL)
- Major wildlife disease
- Lao-Oxford Manul Hospital-Wellcome Trust Research Unit
- Lao Conservation Trust for Wildlife (LCT)
 - the only registered NGOs wildlife rescue and rehab
 - receives rescued/wild animals from the wild and from the zoo

EDUCATION

- Universities
 - assist with animal species identification
 - Currently no MoU with universities but thinks that MoU will be helpful in the future
- List of universities:
 - Mahajul university
 - University of Laos

FINANCIAL

- Inadequate funding for wildlife
- Budget is concentrated to domestic animals and conservation rather than wildlife health
- Reliant on international agencies and are not sustainable (3-5 years program)
- No budget allocation for emergencies
 - will request support from WCS and set up disease investigation team if funding is available

PHYSICAL

- PREDICT program has equipped laboratories
- Consumables (e.g. reagents) are requested from international NGOs

HUMAN

- 6 staff members in NAHL involved in wildlife health
- Lack of manpower and expertise

ANIMAL HEALTH

Subdivisions related to wildlife health:

- National Animal Health Laboratory (NAHL) of DLF
 - national reference centre for animal disease
 - diagnose and livestock product quality testing
 - responsible for human resources capacity development and research in relation to animal health and zoonosis
 - provide emergency treatment to wildlife (mostly) - cases referred by private vets

Other organizations:

- Rescue centre - with private veterinarians
- Zoos - vets trained by rescue center

Activities

- Rescue, rehabilitation, laboratory diagnosis
- No vaccination
- No information on sufficiency of meds and biologicals

ANIMAL WELFARE

- Absence of SOPs and designated legislation on welfare
- Updated penal code in 2018 of Article 253 briefly describes penalty for abuse and mistreatment of animals
- Domestic animal regulations are used for reference in establishing wildlife farms

SURVEILLANCE

- Financial sustainability for surveillance activities is dependent on support from international development partners
- Inadequate personnel for surveillance activities. Personnel resources are stretched between domestic animal and wildlife units. May need to handle domestic animal outbreaks
- Surveillance activities are not sustainable - depends on donor support
- Limited application of results
- Disease surveillance on wildlife farms (eg. bird, monkey, deer) is not possible because it is under the jurisdiction of the DOF

Passive surveillance:

Sick/leash animals and market confiscations

Active surveillance:

- Bats and rodent sampling for CoVid
- Blood parasite sampling with LOMWRU
- Future collaboration with Khon Kaew University (PANDA Project)

Disease-specific:

- ASF
- AJ
- Rickettsial zpp
- Contaminous
- Parasitovirus
- Flamiviruses
- Influenza
- PPR

Species-specific:

- Wild boar
- Roadkill
- Bird
- Civet

LABORATORY

- Laboratory network: NAHL, IPL, LOMWRU
- NAHL of DLF
 - Contains separate lab for domestic animals and wildlife. Sharing reagents and extraction rooms.
 - Equipped laboratories with sufficient personnel
 - Requires support on consumables
 - Immediate request from LOMWRU or IPL, under MOH is possible through MoU between MOH and MAF
 - Biosafety and biosecurity in accordance to national standards by MOH (sealed assessment- 45%)
 - Need to improve capacity of laboratory (eg. biosafety and biosecurity standards, diagnostic capabilities)
 - Need training on using new technology and methods (eg. novel pathogen detection)
 - Has plans to develop into centre for wildlife disease diagnosis and ISO application
- Laboratory SOPs are adapted from domestic animal laboratories
- Proper cold-chain system according to guidelines

DATA

- Raw data are extracted manually
- Field morbidity and mortality are monitored using SMART for Health to enter data on sick and dead wildlife during ranger patrols
- Wildlife Health Intelligent Platform (WHIP) is a centralized database system that organizes data from SMART for Health
 - data includes reports of disease events, recaptives, photographs, storage of samples, diagnostic tests results

RISK ASSESSMENT & ZOOSES

- Conducted by IPL and prior pre-field work
- High risk interfaces: forest activities, horse-meat (illegal), consumption, market
 - Challenging to deter wildlife consumption as it is a source of protein for impoverished communities. Chemical for preservation cause sickness
- Need better guidance on application of results
 - Attention given to many zoonotic diseases such as coronavirus, AI, schistosomiasis, leptospirosis, Q fever, Hepatitis A/B etc.
 - So far, no zoonotic disease cases report involving wildlife interface

REPORTING

- SOPs are in place for immediate notification of suspected cases from field officers using SMART for Health
 - Delayed reporting due to multiple layers of information transfer (district, provincial, central) and the absent of data submission schedule
- Complex data sharing mechanism between wildlife personnel and laboratory personnel as they belong to different departments
- Need to establish channels for urgent information sharing directly to central office and regular chain of command
- Community reporting
 - Illegal farms are not compliant on reporting, while legal wildlife farms pursue disease investigations when losses are substantial
 - Abnormal surveillance results detected by NAHL are reported to DLF with relevant information shared with MOH and Ministry of Natural Resources and Environment (MORNRE)
 - Lao Conservation Trust for Wildlife and zoos will contact wildlife FP immediately upon discovering sick or dead wildlife and send samples with testing funded by private organizations
 - Reporting obligations to WOFAN

RESPONSE

- Limited human resources for outbreak investigation
- MAF conducts field investigation through livestock officers
- If they are unavailable, forest personnel have been trained in sample collection, submission to laboratories for testing, and carcass management

ENVIRONMENT

- National Strategy for One Health

ASSESSMENT

- National assessment tool is absent
- WCS and IPS has independent assessment tool

TRAINING

- No curriculum on wildlife health
- For veterinarians and veterinary paraprofessionals
- Need training on epidemiology, lab techniques and analysis for EDIs, biosecurity, and use of SOPs, animal species identification and classification, risk assessment on laboratory sampling of wildlife

TRACEABILITY

- Development of Forestry
 - Identification of Wildlife and Wildlife Meat

COMMUNICATION

- Awareness of spillover risks with development partners through various forms of outreach and media
- Needs more resources to provide food safety advice on wildlife consumption (protein diet)