Foot-and-Mouth Disease (FMD) Surveillance in Lao PDR

2025–2026

Overview · Surveillance · Virus Research · Future Plans



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01

Overview

FMD remains endemic in Lao PDR

What is foot-and-mouth disease?

Causative agent

FMD virus (genus Aphthovirus, family Picornaviridae); 7 serotypes: O, A, C, Asia 1, SAT 1–3

Susceptible animals

Cloven-hoofed animals: cattle, buffalo, pigs, goats, sheep and wildlife

Clinical signs

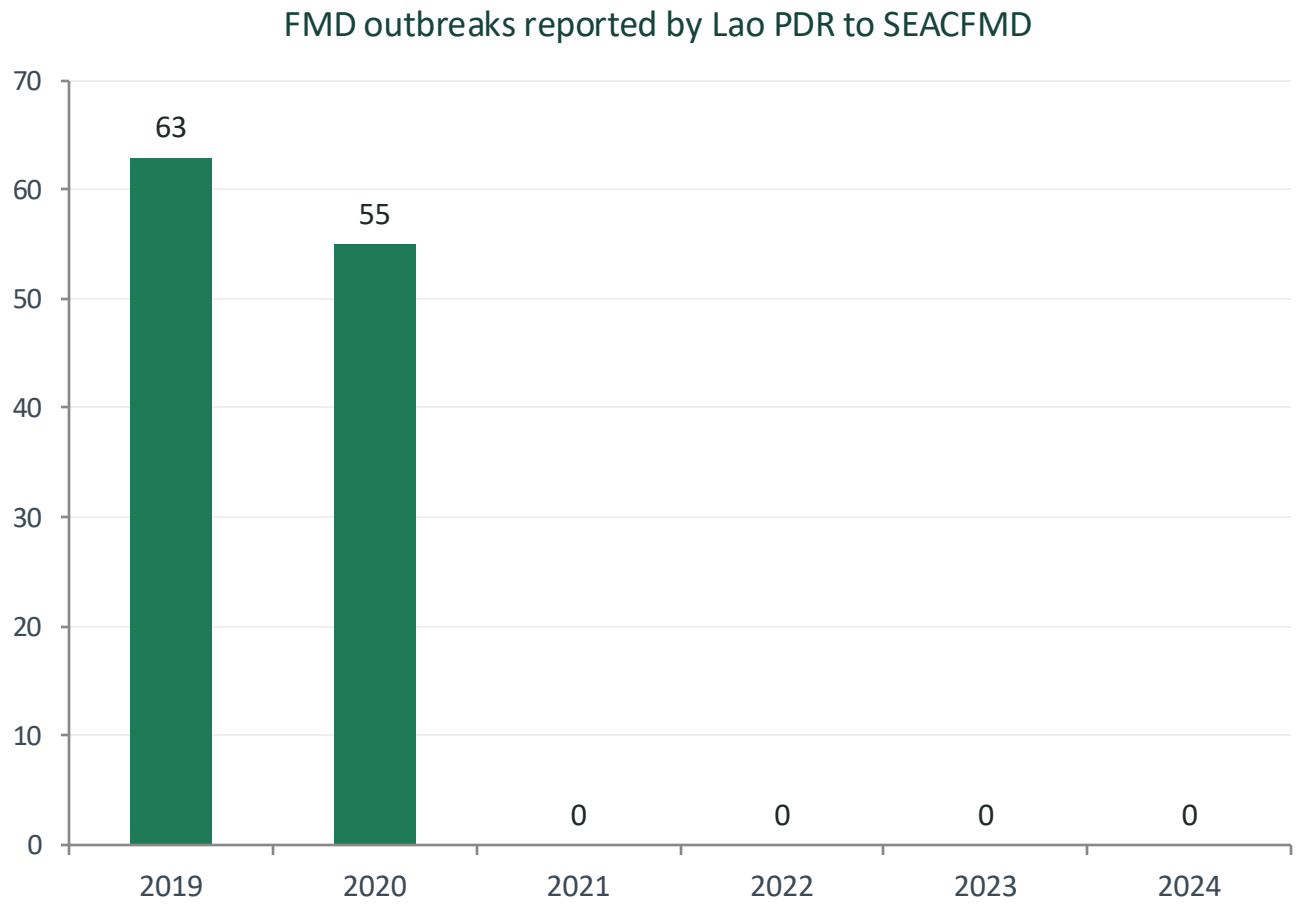
Fever, salivation, vesicles/erosions on mouth, lips, feet and teats; lameness

Transmission

Highly contagious via respiratory and oral routes; animal movement and carriers are the main drivers

Low mortality in adult animals, but major production losses and disruption of cross-border livestock trade

FMD in Lao PDR: zero reports, but the virus still circulates



PCP-FMD Stage 2

Lao PDR has remained at Stage 2 from 2018 to 2025

Borders 5 countries

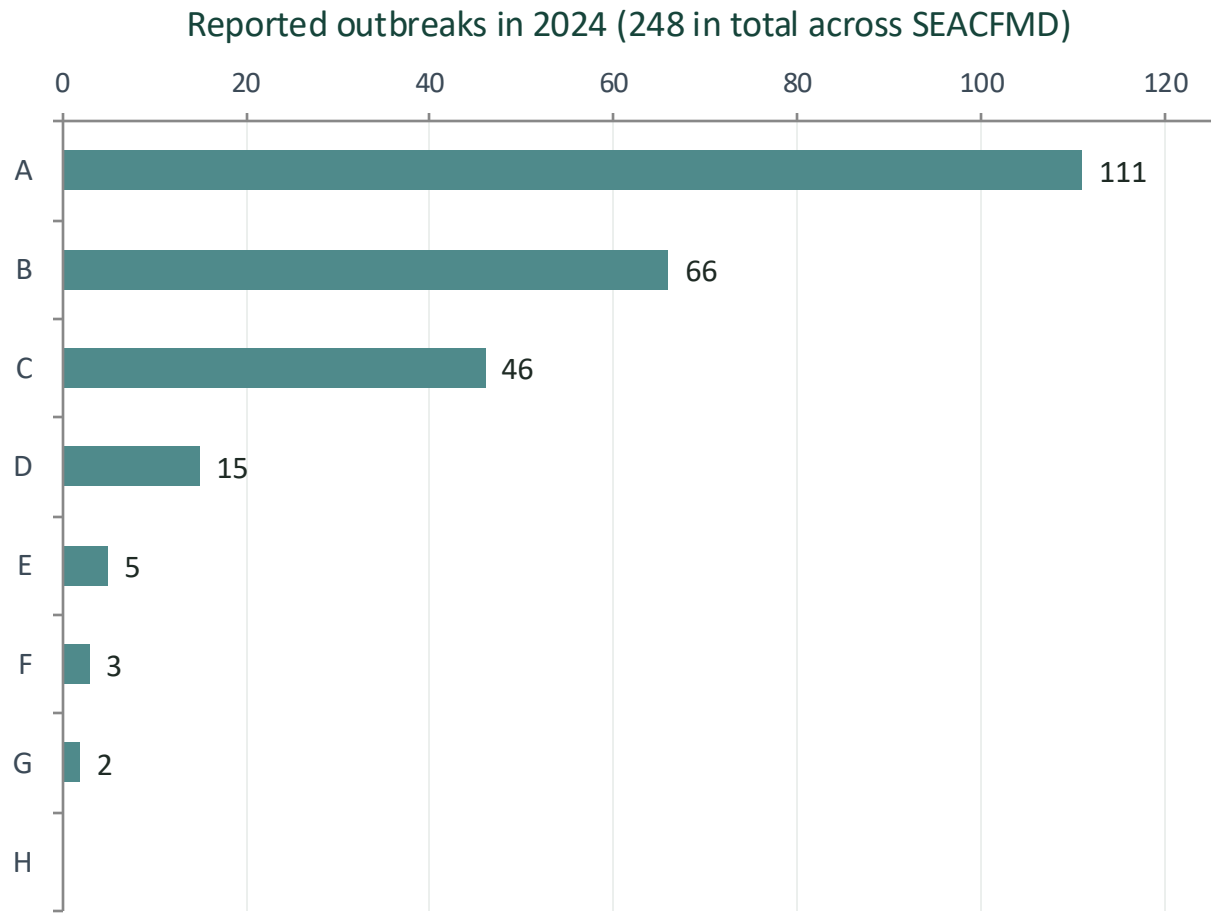
All neighbours are FMD-endemic; Laos sits on a major GMS livestock movement route

Zero ≠ disease-free

Abattoir serology shows ongoing virus circulation — reflecting delayed or under-reporting

Note: national outbreak data for 2025–2026 has not been published — add the latest figures from the Department of Livestock and Fisheries

Regional situation: cross-border risk remains high



O/ME-SA/Ind-2001e

Dominant lineage in Southeast Asia since 2020; detected in Thailand 2023–2024

O/ME-SA/SA-2018

Emerging lineage of concern (Middle East and Europe, 2025)

SAT1 / SAT2

New serotypes that may arrive from the Middle East — not covered by current vaccines

Animal movement: Laos is a major cattle and buffalo transit route

Last 16 months (reported to the 16th UMWG Meeting, April 2026)

356,800

Cattle & buffalo in transit

Thailand → Vietnam (cattle 179,900 · buffalo 176,900)

35,000

Cattle & buffalo imported

From Thailand and Myanmar

5,131

Cattle & buffalo exported

China 3,931 · Vietnam 1,200

Illegal domestic and cross-border movement also occurs — main border checkpoints: Bokeo, Xayaboury, Savannakhet, Khammouane, Champasak and Vientiane Capital

02

Surveillance

Reporting system, zoning and vaccination

Surveillance and disease reporting system

Village Veterinary Workers (VVW)

Detect signs and report

District Agriculture Office (DAEO)

Investigate and sample

Provincial Agriculture Office (PAFO)

Compile and control

DLF / National laboratory

Confirm and report to WOAH

Passive surveillance

Clinical reporting from village, district and province; abattoir blood sampling for NSP testing

Active surveillance

In the Luang Namtha free and buffer zones: 10% blood sampling, 30 sentinel animals, NSP and probang testing

Digital systems

Disease reporting system under development; joined ARAHIS/WAHIS onboarding (Aug 2025)

Disease control zoning for cattle trade with China

Collection zone
Assembly and pre-quarantine

- Livestock collection farms
- 45-day quarantine before moving to the quarantine zone
- Ear tagging; HS, FMD and LSD vaccination twice (day 0–4 and day 30–35)

Buffer zone
Villages around the free zone

- 22 villages, > 1,800 cattle and buffalo
- FMD vaccination with post-vaccination monitoring
- 10% blood sampling every 3 months for NSP

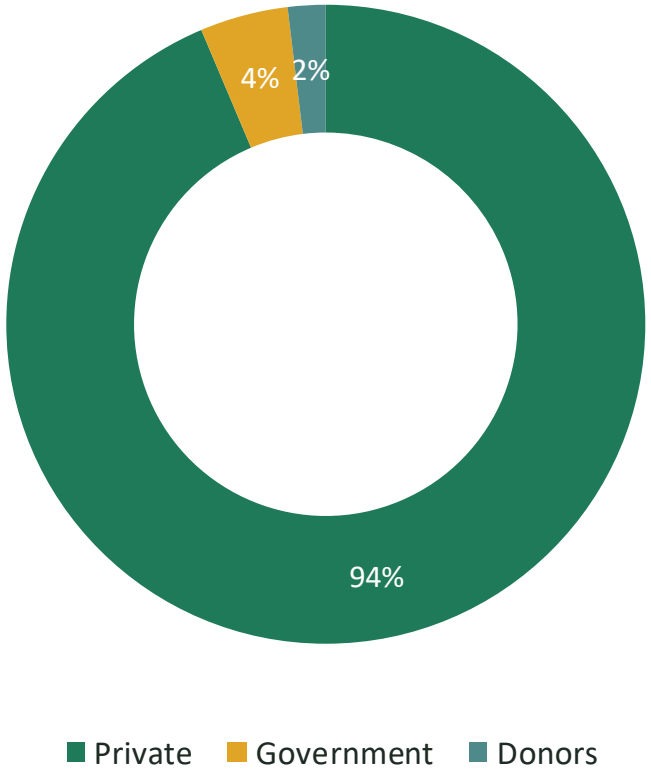
Free zone
Sing district, Luang Namtha

- Quarantine station; 30-day quarantine before export
- 10% blood sampling for LPB-ELISA
- 30 sentinel animals; NSP and probang testing

Control zone radius expanded from 50 km to 100 km, covering Luang Namtha, Bokeo, Oudomxay, Phongsaly and Huaphanh

Vaccination: the private sector imports most vaccine

FMD vaccine imported: ~3,140,000 doses in total



2,940,000 doses

Private sector (commercial farms, livestock traders)

140,000 doses

Government — free campaigns in target areas

60,000 doses

Donors / international organisations

Vaccine types (imported from Thailand, China, Vietnam)

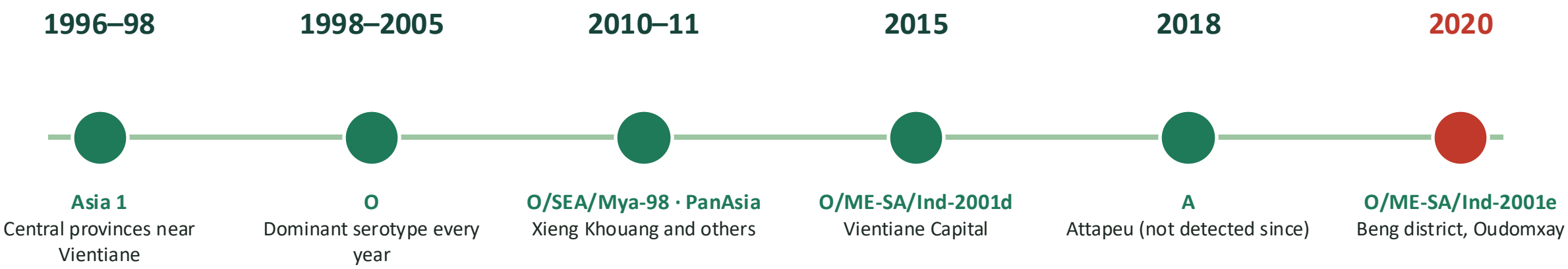
- Inactivated bivalent (O + A) and trivalent (O, A, Asia 1) vaccines
- In the control zone: > 80% positive post-vaccination immunity

03

Virus Research

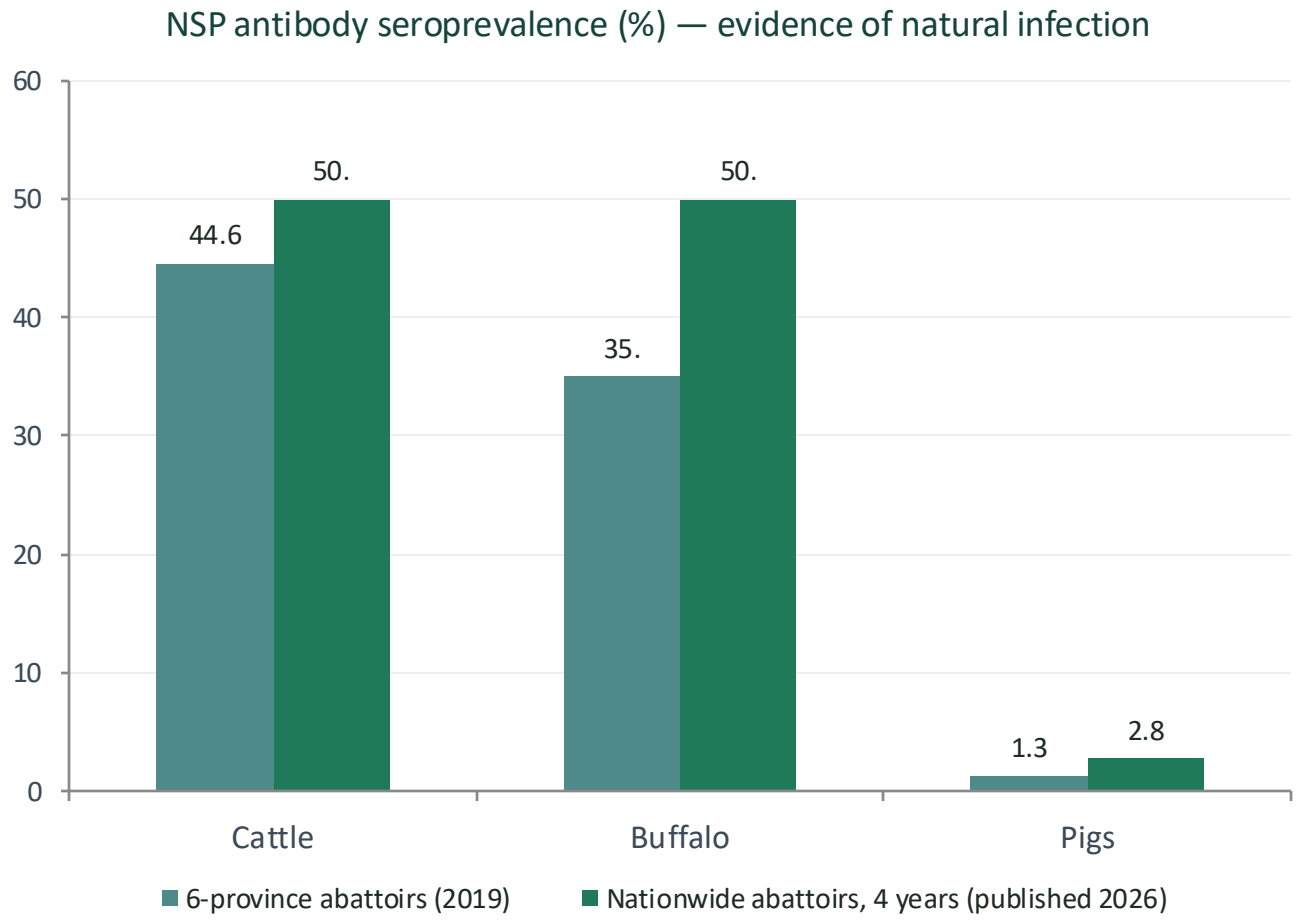
Strains, serology findings and gaps

FMD virus strains detected in Lao PDR



O/ME-SA/Ind-2001e found in Laos in 2020 shared up to 99.8% identity with viruses from Vietnam and Thailand
Evidence of cross-border spread along livestock movement routes — Ind-2001e remains the dominant regional lineage

Serology: nearly half of cattle and buffalo show past infection



1,280 samples (2019)

Overall 22.8%; highest in Xieng Khouang 35.3% and Savannakhet 27.0%; serotypes O and A both detected

Hotspots

2026 nationwide study: buffalo highest in western and southern provinces; cattle highest in central provinces

“Mouth problems” signal

Districts reporting this sign had 49.7% seroprevalence vs 31.6% — usable as an early warning

Gaps and challenges

Delayed / under-reporting

Passive surveillance has low sensitivity; zero reports despite high serology

High vaccine cost

Farmers have little interest in vaccinating because few animals die

Funding and equipment

Lack of funds and field equipment for investigation and sampling

Free-range farming

Low awareness and weak biosecurity

Illegal movement

Animals and animal products, both domestic and cross-border

Limited strain typing

Few samples sequenced; the latest published Lao genotype data is from 2020

04

Future surveillance plans

Aligned with the SEACFMD Roadmap 2026–2030

Surveillance plan 2026–2030

Short term · 2026

- Pilot VVW training
- Pilot clinical-sign reporting
- Establish the Animal Disease Reporting System : LAHIS

Medium term · 2026–2027

- ADB GMS project: upgrade labs, slaughterhouses and quarantine
- Assess new FMD-free zones; maintain the Luang Namtha free zone

Long term · 2028–2030

- New PVS evaluation; progress beyond PCP-FMD Stage 2
- Risk-based surveillance along borders and transit routes
- Sequence samples from every outbreak; use vaccines matched to field strains

Conclusions and recommendations

01

FMD remains endemic

~50% of cattle and buffalo carry antibodies from infection, despite zero reported outbreaks

02

Make surveillance more sensitive

Village veterinary workers, clinical-sign reporting and digital reporting

03

Track virus strains

Sequence samples to monitor Ind-2001e and new threats (SA-2018, SAT)

04

Control animal movement

Expand zoning and use strain-matched vaccines for safe trade

THANK YOU