

# Epidemic Intelligence for Animal Health in Thailand

WOAH Epidemic Intelligence for Event-Based Surveillance in Asia-Pacific

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World Organisation  
for Animal Health



- **Objectives of Epidemic Intelligence**

- The Department of Livestock Development applies epidemic intelligence to:
  - *Monitor animal disease events globally and within our country*
  - *Identify emerging threats as early as possible*
  - *Assess the risk of disease introduction and spread*
  - *Support timely surveillance, preparedness, and response*



- **Enhancing animal surveillance systems**

- The Department of Livestock Development (DLD) organized an Epidemic Intelligence from Open Sources (EIOS) system workshop in March 2024, supported by FAO's Regional Office for Asia and the Pacific, the MOH Thailand and WHO SEARO.
- The workshop primarily aimed to enhance the capacity of animal surveillance systems, with a particular focus on early warning functions and animal health intelligence to inform timely response.



*EIOS training at DLD, March 2024, Bangkok, Thailand. Photo: ©WHO*

[https://cdn.who.int/media/docs/default-source/eios/eios-newsletter\\_may-2024-final.pdf?sfvrsn=b46a5115\\_3&download=true](https://cdn.who.int/media/docs/default-source/eios/eios-newsletter_may-2024-final.pdf?sfvrsn=b46a5115_3&download=true)



- **EIOS: Active Monitoring Boards**

- DLD maintains dedicated EIOS tracking boards to ensure comprehensive situational awareness of animal health threats:

⋮ **EIOS** EPIDEMIC INTELLIGENCE  
FROM OPEN SOURCES **Monitoring** 2.1.10



Avian influenza \_ DLD

🔑 Owner: Thailand

📅 Updated: 2026-06-10, 03:27:30 UTC

📅 Created: 2024-04-04, 03:12:53 UTC



Livestock Dz \_ DLD

🔑 Owner: Thailand

📅 Updated: 2026-06-09, 03:21:46 UTC

📅 Created: 2024-04-25, 08:31:26 UTC

***Livestock Disease Monitoring*** – Covers 46 animal diseases of importance to livestock production and public health, such as foot-and-mouth disease (FMD), African swine fever (ASF), Newcastle disease, anthrax, peste des petits ruminants (PPR), and Nipah virus.



- **Routine Epidemic Intelligence Monitoring (Automated via Google Apps Script)**
  - Daily Animal Disease News Summary
    - *An automated pipeline to track, summarize, and deliver daily factual news on animal diseases such as Avian Influenza and FMD*
    - *Fetches Google News RSS (past 24 hours)*
    - *Summaries and send email daily*
  - WAHIS Analytics & Alert System
    - *Live Dashboard: Interactive filtering (time, region, disease, status) with summaries.*
    - *Alerts: Automated email notifications*
    - *Target Scope: Real-time tracking of FMD, HPAI, and Anthrax across Asia (customizable).*

| COUNTRY     | REGION/CONTINENT | REPORT NUMBER | DISEASE                                                          | SEROTYPE/SUBTYPE | REASON                                      | EVENT STATUS | REPORT STATUS | START DATE | REPORT DATE |
|-------------|------------------|---------------|------------------------------------------------------------------|------------------|---------------------------------------------|--------------|---------------|------------|-------------|
| Cambodia    | Southeast Asia   | FUR_1         | Newcastle disease virus (Inf. with)                              | Not specified    | Recurrence of an eradicated disease         | Stable       | Validated     | 2026-06-08 | 2026-07-29  |
| Vietnam     | Southeast Asia   | IN_0          | Foot and mouth disease virus (Inf. with)                         | A                | Recurrence of an eradicated strain          | On-going     | Validated     | 2026-06-01 | 2026-07-02  |
| Philippines | Southeast Asia   | IN_0          | High pathogenicity avian influenza viruses (Inf. with) (poultry) | H5N1             | First occurrence in a zone or a compartment | On-going     | Validated     | 2026-05-02 | 2026-07-10  |
| Cambodia    | Southeast Asia   | FUR_1         | High pathogenicity avian influenza viruses (Inf. with) (poultry) | H5N1             | Recurrence of an eradicated disease         | Resolved     | Validated     | 2026-04-22 | 2026-05-26  |
| Malaysia    | Southeast Asia   | FUR_1         | Newcastle disease virus (Inf. with)                              | Not specified    | Recurrence of an eradicated disease         | On-going     | Validated     | 2026-04-02 | 2026-05-25  |
| Singapore   | Southeast Asia   | FUR_3         | Newcastle disease virus (Inf. with)                              | Not specified    | Recurrence of an eradicated disease         | On-going     | Validated     | 2026-03-25 | 2026-07-30  |



## • From Signal to Field Action

### Intelligence Sources

EIOS



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WAHIS

**BEACON**  
Biothreats Emergence, Analysis, and Communications Network

<https://beaconbio.org/en/>



**CIDRAP**

Center for Infectious Disease Research and Policy

<https://www.cidrap.umn.edu/>

Google News

**Social media**

Routine  
monitoring

**Screening  
Aggregate  
Summaries**

- Key Diseases: AI, Anthrax, ASF, CCHF, CSF, Ebola, FMD, LSD, ND, NiV, PPR
- Risk Factors & Transmission Pathways
- Field Control & Prevention

Since April 2024, approximately 400 articles containing disease updates have been disseminated to front-line veterinary chat groups.

On-site investigation and sampling of suspect animals by local vet services and other agencies

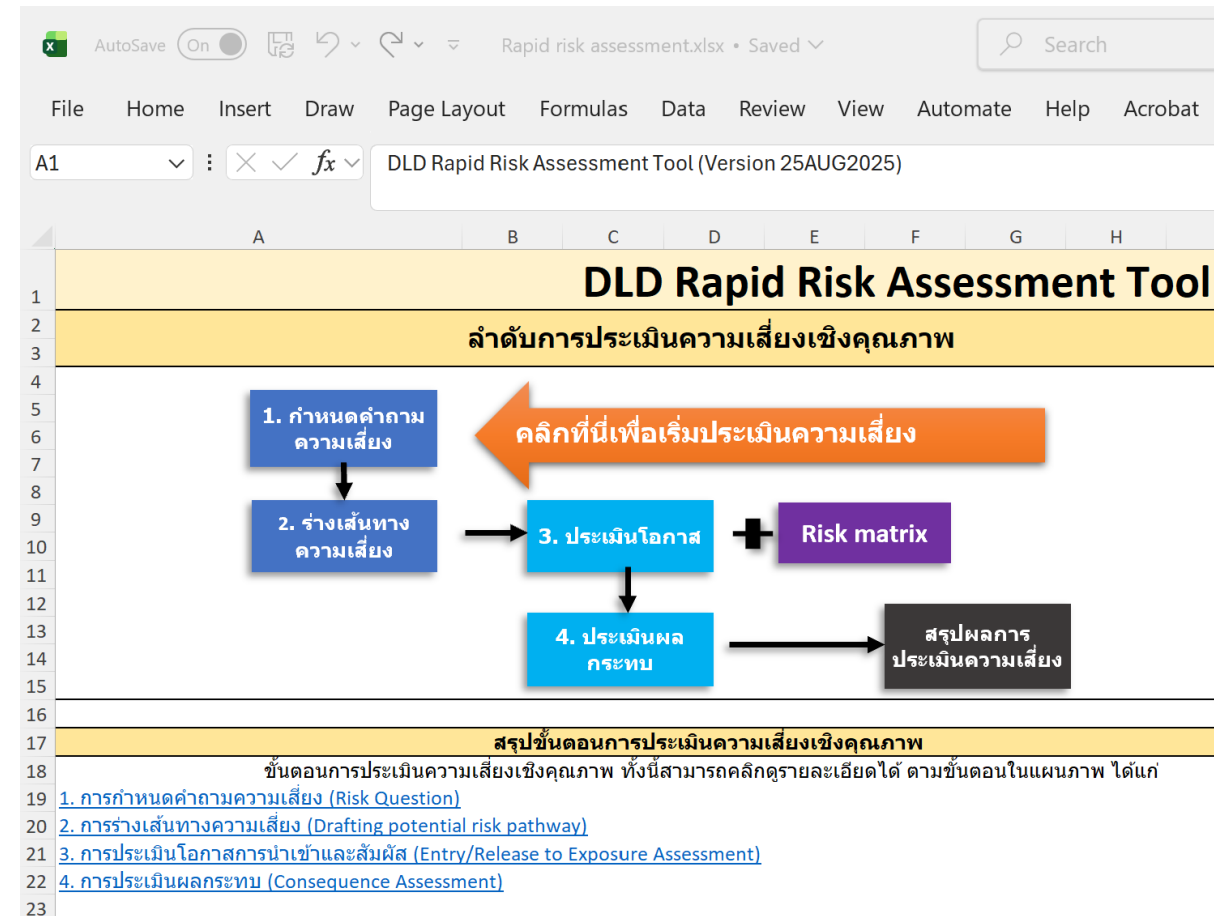
Qualitative rapid risk assessment  
Spatial/Temporal risk assessment

**Formulation of preventive guidelines  
and surveillance plan**



## • Qualitative rapid risk assessment

- Conducts import risk assessments for emerging animal diseases
- Evaluates risk pathways:  
Entry → Exposure → Consequence
- Excel-based tool
- Developed by the Risk Assessment Team at DLD
- Reporting and disseminating results along with recommendations for import controls and field surveillance
- Since 2024, 25 risk assessments have been conducted for diseases such as Foot-and-Mouth Disease (FMD), Crimean-Congo Hemorrhagic Fever (CCHF), West Nile Virus (WNV), Peste des Petits Ruminants (PPR), and Bluetongue virus.





- **Geospatial and Temporal Analysis of Avian Influenza Risk in Thailand**

- Utilize WAHIS data to identify the spatial and temporal risks associated with AI in Thailand using a geographic information system (GIS)-based multi-criteria decision analysis (MCDA) approach.
- Improve risk-based surveillance programs and implement preventive and control strategies:
  - *Identify areas for sample collection*
  - *Optimize timing for active surveillance*

Wiley  
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Volume 2024, Article ID 6474182, 11 pages  
<https://doi.org/10.1155/2024/6474182>

WILEY

Research Article

## Geospatial and Temporal Analysis of Avian Influenza Risk in Thailand: A GIS-Based Multi-Criteria Decision Analysis Approach for Enhanced Surveillance and Control

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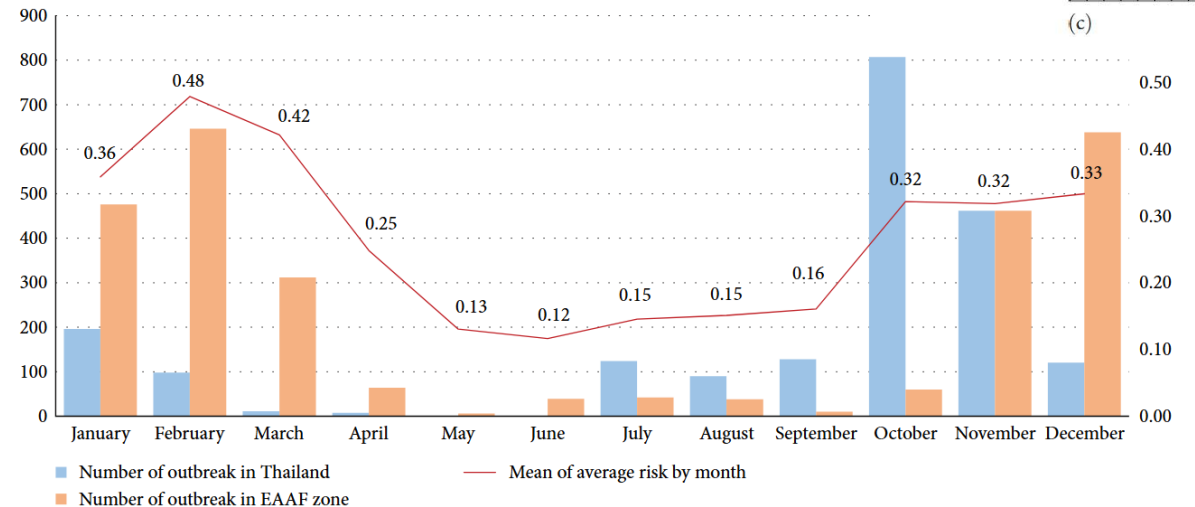
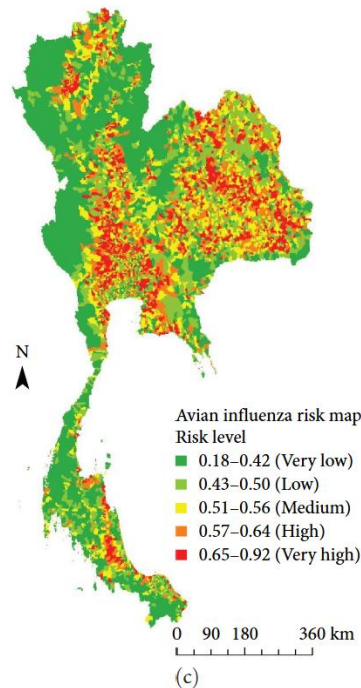


FIGURE 6: Possible temporal effects on avian influenza risk. Left Y-axis indicates the number of outbreaks used as scale for number of outbreaks in Thailand from 2004 to 2008 (Blue bar) and number of outbreaks in the East Asian–Australasian Flyway (EAAF) zone between May 2021 and April 2022 (Orange bar). Right Y-axis indicates mean average risk value (Red line) for all poultry at the provincial level in Thailand. X-axis represents time (in months).

Higher-risk periods for avian influenza at the beginning and end of the year, associated with the number of HPAI outbreaks and seasonal bird migration.



- **Impact of Epidemic Intelligence on National Surveillance Capacity**

- Improved Early Detection and Timely Response
- Strengthened Risk-Based Surveillance
  - *Adjust surveillance activities based on risk, for example, by updating target wild bird species for Avian Influenza surveillance.*
- Improved Decision-Making and Preventive Action
  - *Use information to support disease preventive measures, such as cleaning and disinfection of animal transport trucks at border checkpoints.*
- Strengthened Cross-Sector Collaboration
  - *Strengthen coordination among veterinary services, public health agencies, wildlife authorities, and universities.*

Targeted species:  
Bird of prey, Waterbird

| Order            | Number of species |
|------------------|-------------------|
| Accipitriformes  | 32                |
| Anseriformes     | 13                |
| Charadriiformes  | 69                |
| Ciconiiformes    | 3                 |
| Falconiformes    | 2                 |
| Gruiformes       | 11                |
| Pelecaniformes   | 19                |
| Podicipediformes | 2                 |
| Suliformes       | 4                 |
| <b>Total</b>     | <b>155</b>        |



Kasetsart University  
Raptor Rehabilitation Unit



Wild bird sample  
collection in collaboration  
with wildlife authorities



On-site rabies investigation in collaboration  
with public health agencies



- **Challenges and Future activities**

- **Challenges**

- *High volume of articles to screen and frequent duplications*
- *Need for skilled staff to effectively prioritize articles*
- *Limited access to certain social media platforms*

- **Future activities**

- *Develop tools for social media monitoring and real-time notifications.*
- *Enhance capacity building and strengthen collaboration*

## • Acknowledgments

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- FAO's Regional Office for Asia and the Pacific
- WOAH



**กรมปศุสัตว์**  
กระทรวงเกษตรและสหกรณ์  
DEPARTMENT OF LIVESTOCK DEVELOPMENT



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# Thank you



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