



OFFLU updates and Global HPAI strategy

Dr Gounalan Pavade


World Organisation for Animal health (WOAH)

22 - 25 September 2025

1st GF-TADs Regional Conference of Standing Groups of Experts on
priority transboundary animal diseases in the European region
Belgrade, Serbia



offlu



WOAH | FAO

network of expertise on animal influenza

OFFLU updates



What is OFFLU?

- Established in 2005
- Joint FAO/WOAH initiative
- Global expertise on avian, swine, and equine influenza
- Strong collaborations with WHO and international partners



Volume 12, Number 8—August 2006

Dispatch

OFFLU Network on Avian Influenza

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[Cite This Article](#)



**Food and Agriculture
Organization of the
United Nations**







**World Organisation
for Animal Health**



OFFLU's Core Objectives

1. To share and offer technical advice, training and veterinary expertise to international organisations and Member Countries to assist in the prevention, diagnosis, surveillance, and control of animal influenza.
2. To exchange scientific data and biological materials (including virus strains) within the network, analyse such data, and share information with the wider scientific community.
3. To collaborate with the WHO on issues relating to the animal-human interface, including pandemic preparedness for early preparation of human vaccines.
4. To highlight influenza surveillance and research needs, promote their development and coordination.



-  **Animal Influenza (FAO)**
-  **Animal influenza (FAO/WOAH)**
-  **Avian Influenza**
-  **Swine Influenza**

How does OFFLU operate?

FAO and WOAH Reference laboratories collaborating with national experts

OFFLU's work covers several themes through its technical working groups

- Avian influenza
- Equine Influenza
- Swine influenza
- Wildlife
- Applied epidemiology
- Human animal Interface
- Socio - economic



Objective 1. To share and offer technical advice, training and veterinary expertise to international organisations and Member Countries to assist in the prevention, diagnosis, surveillance and control of animal influenza



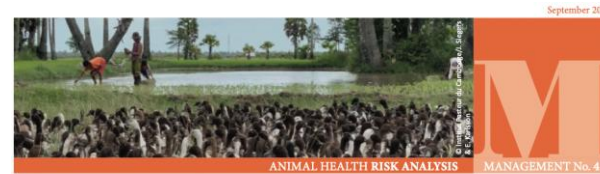
- Contributed to >167 publications and guidance documents (OFFLU documents & reviewing of FAO/WOAH outputs)

Avian Influenza Matching – advise countries on the need to update poultry vaccines

Equine influenza vaccine updates

Internationally harmonised proficiency testing for influenzas

Expert support and advise to countries on diagnostics



GUIDING PRINCIPLES FOR THE DESIGN OF AVIAN INFLUENZA ACTIVE SURVEILLANCE IN ASIA

Designing active, comprehensive, risk-based avian influenza surveillance

empres-animal health 360 | NO. 48/2022



PERSPECTIVE

Avian influenza: information must improve effective interventions

Contributors: Les Sims, Sophie von Dobschuetz, Dirk Pfeiffer, Tim Harder, Guillaume Fournié, Arnaud Bataille, Folorunso Fasina, Beatriz Martínez-López and Joanne Taylor¹



Influenza A Cleavage Sites

version 4th January 2022

Background:

Diagnostic guidance: HPAI dairy cattle

May 13, 2024

[read more](#)

Joint FAO/WHO/WOAH preliminary assessment of recent influenza A(H5N1) viruses

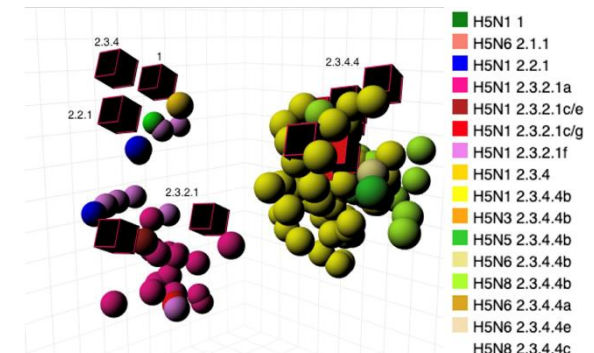
May 6, 2024

[read more](#)

OFFLU annual report 2023

Feb 26, 2024

[read more](#)



OFFLU Avian Influenza Matching (AIM) project

To provide up-to date information to the poultry sector, governments, and poultry vaccine manufacturers on antigenic characteristics of circulating avian influenza viruses including comparisons with vaccine antigens. This information will facilitate selection of appropriate vaccines for poultry and updating of poultry vaccine antigens in places where vaccines are being used.

- ☐ AIM pilot study started in December 2022
- ☐ AIM pilot report published in October 2023 (<https://www.offlu.org/wp-content/uploads/2023/11/OFFLU-AIM-REPORT-2023.pdf>)
- ☐ AIM webinar (https://www.youtube.com/watch?v=CPdiaY4tf_k)
- ☐ AIM 2nd technical report published in July 2024 (https://www.offlu.org/wp-content/uploads/2024/07/OFFLU-AIM-Technical-report_Final-1.pdf)
- ☐ Aim Webinar – FAQs (<https://www.offlu.org/wp-content/uploads/2024/11/AIM-Webinar-summary-and-FAQs.pdf>)
- ☐ AIM Executive summary published in October 2024 (<https://www.offlu.org/wp-content/uploads/2024/11/OFFLU-Avian-Influenza-Vaccine-Matching-final-clean.pdf>)
- ☐ AIM 2025 report to be released soon

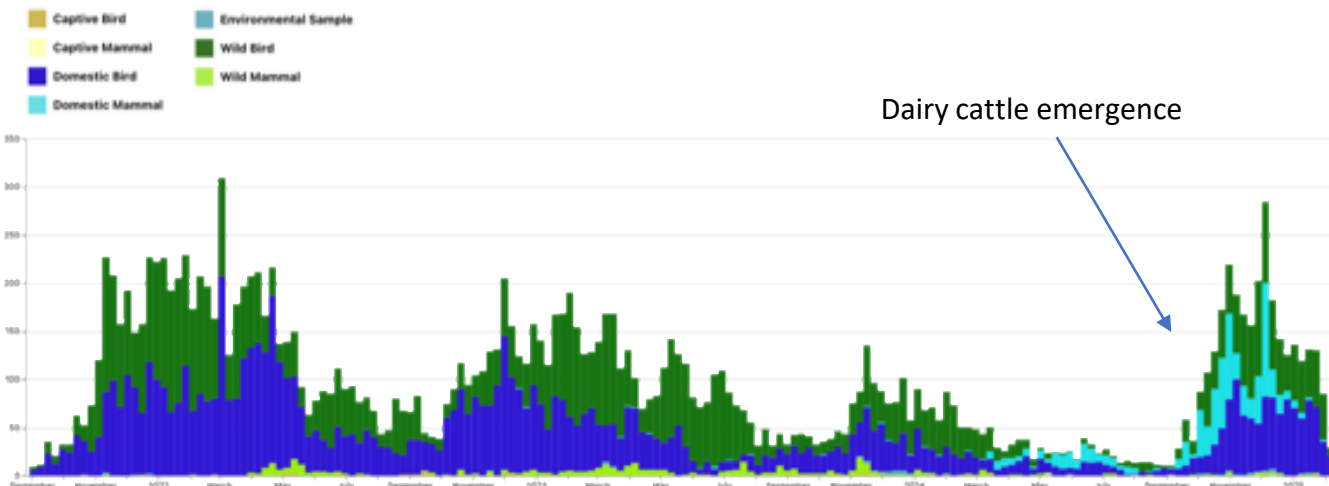
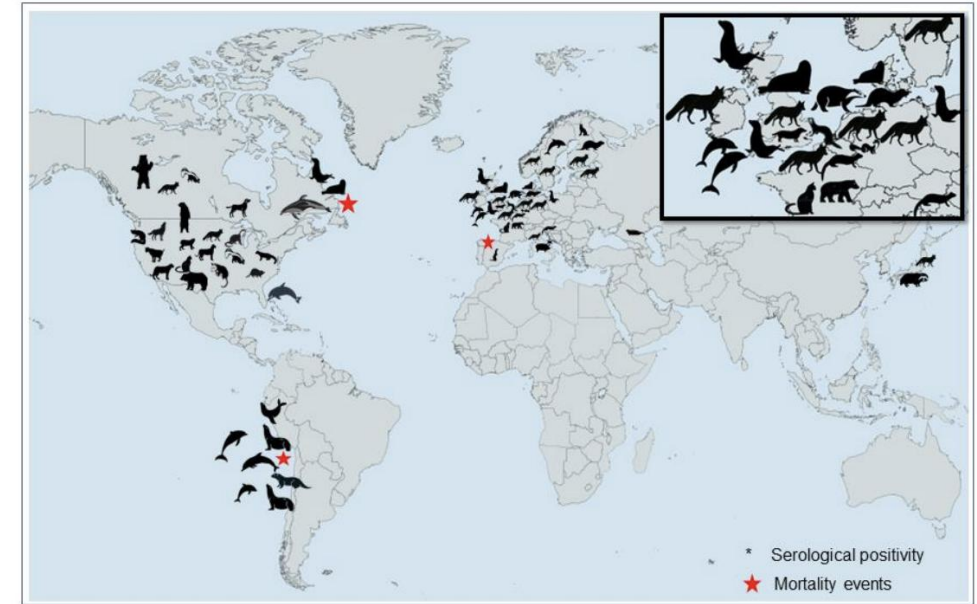
New hosts (2021-2024)

Mammals

- OFFLU statement on infections with AIV in cats in Poland (2023)
- OFFLU call to discuss Avian Influenza events in mammals (2023)

Dairy cows

- OFFLU statement on high pathogenicity avian influenza in dairy cows (2024)
- Updated OFFLU statement on high pathogenicity avian influenza in dairy cows (2024)
- Diagnostic guidance: HPAI dairy cattle (2024)
- Updated joint FAO/WHO/WOAH public health assessment of recent influenza A(H5) virus events in animals and people (2024, 2025)
- FAO: Recommendations for the surveillance of influenza A(H5N1) in cattle (2024)
- WOAH: Case definition for notification of HPAI in cows as emerging disease (2025)



American black bear (<i>Ursus americanus</i>)	Burmeister's porpoise (<i>Phocoena spinipinnis</i>)	European polecat (<i>Mustela putorius</i>)	Porpoise (<i>Phocoena phocoena</i>)
American mink (<i>Neogale vison</i>)	Caspian seal (<i>Pusa caspica</i>)	Ferret (<i>Mustela furo</i>)	Raccoon (<i>Procyon lotor</i>)
American pine marten (<i>Martes americana</i>)	Cat (<i>Felis catus</i>)	Fisher cat (<i>Pekania pennanti</i>)	Red fox (<i>Vulpes vulpes</i>)
Amur leopard (<i>Panthera pardus orientalis</i>)	Chilean dolphin (<i>Cephalorhynchus eutropia</i>)	Grey seal (<i>Halichoerus grypus</i>)	Skunk (<i>Mephitis mephitis</i>)
Amur tiger (<i>Panthera tigris</i>)	Common dolphin (<i>Delphinus delphi</i>)	Harbour seal (<i>Phoca vitulina</i>)	South American fur seal (<i>Arctophoca australis</i>)
Asiatic black bear (<i>Ursus thibetanus</i>)	Coyote (<i>Canis latrans</i>)	Japanese raccoon dog (<i>Nyctereutes viverrinus</i>)	South American bush dogs (<i>Speothos venaticus</i>)
Bobcat (<i>Lynx rufus</i>)	Dog (<i>Canis familiaris</i>)	Kodiak grizzly bear (<i>Ursus arctos horribilis</i>)	South American sea lion (<i>Otaria flavescens</i>)
Beech marten (<i>Martes foina</i>)	Eurasian badger (<i>Meles meles</i>)	Marine otter (<i>Lontra felina</i>)	Virginia opossum (<i>Didelphis virginiana</i>)
Bottlenose dolphin (<i>Tursiops truncatus</i>)	Eurasian lynx (<i>Lynx lynx</i>)	Mountain lion (<i>Puma concolor</i>)	White-sided dolphin (<i>Lagenorhynchus acutus</i>)
Brown bear (<i>Ursus arctos</i>)	Eurasian otter (<i>Lutra lutra</i>)	North American river otter (<i>Lontra canadensis</i>)	Pig (<i>Sus scrofa</i>)

Coming soon - OFFLU Guidelines For High Pathogenicity Avian Influenza Virus Risk Mitigation in Cattle

New regions and virus lineages (2021-2024)

Wildlife and Antarctic regions

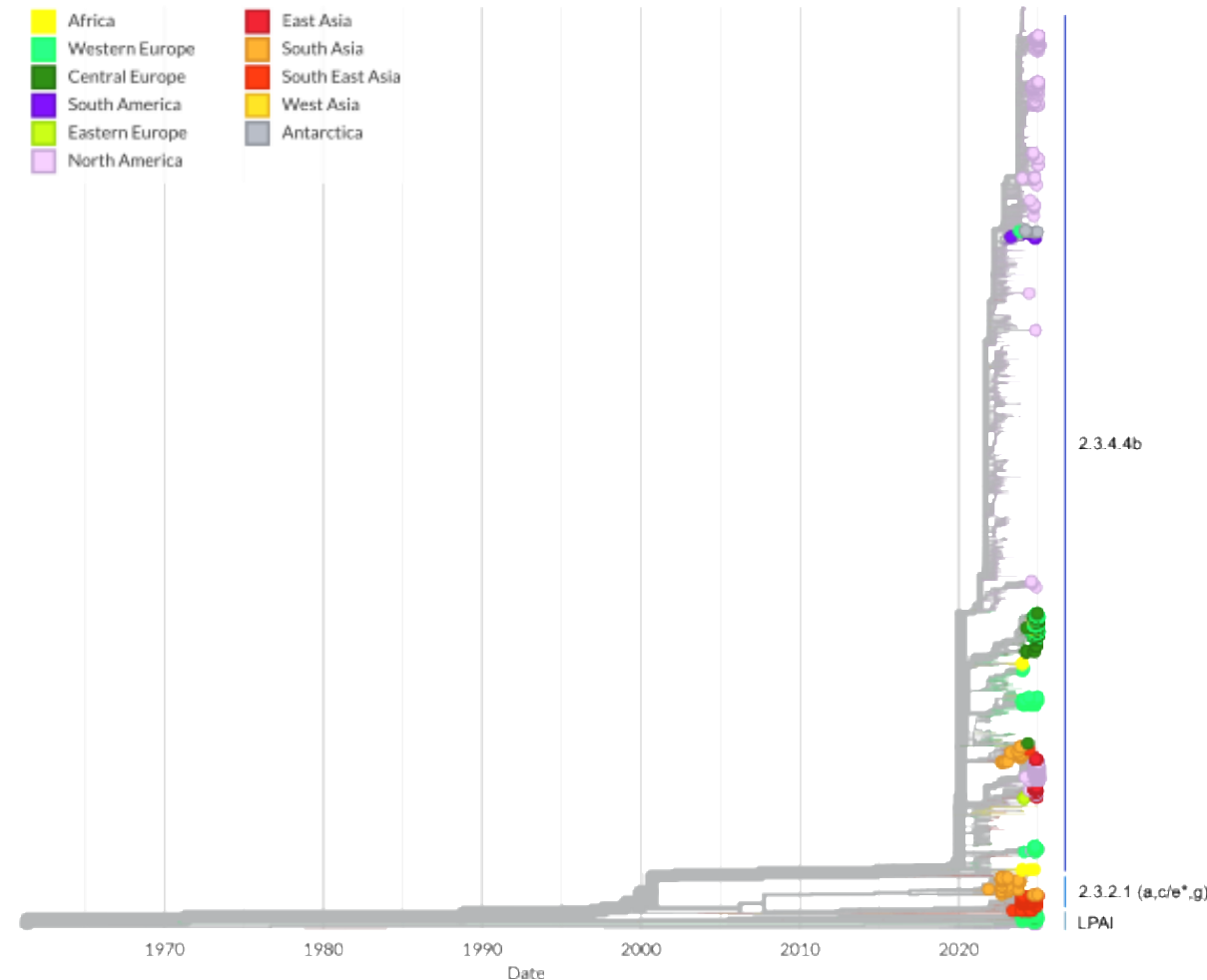
- Continued expansion of high pathogenicity avian influenza H5 in wildlife in South America and incursion into the Antarctic region (2024)
- 'Unprecedented': How bird flu became an animal pandemic (2024)
- Emergence, spread, and impact of high pathogenicity avian influenza H5 in wild birds and mammals of South America and Antarctica, October 2022 to March 2024 (2024)
- Southward expansion of high pathogenicity avian influenza H5 in wildlife in South America: estimated impact on wildlife populations, and risk of incursion into Antarctica (2023)
- Continued expansion of high pathogenicity avian influenza H5 in wildlife in South America and incursion into the Antarctic region (2023)

Latin America and Caribbean region

- Public health resource pack for countries experiencing influenzas in animals (2023)
- OFFLU call to discuss AI in the Latin America and Caribbean region (2023)

Emerging virus lineages

- OFFLU technical statement on H3N8 (2022)
- Tripartite preliminary rapid risk assessment on H3N8 (2022)
- OFFLU contribution to a rapid risk assessment of recent H5N1 clade 2.3.4.4b viruses (2022)



Objective 2. To exchange scientific data and biological materials (including virus strains) within the network, to analyse such data, and to share such information with the wider scientific community

- Large gaps in data availability around the world
- Confidentiality agreements and MTAs enable countries to share data with OFFLU for assessment

TCs on genetics and epidemiology of current influenza situation

Virus exchange among network labs

Sharing up to date scientific information with the community

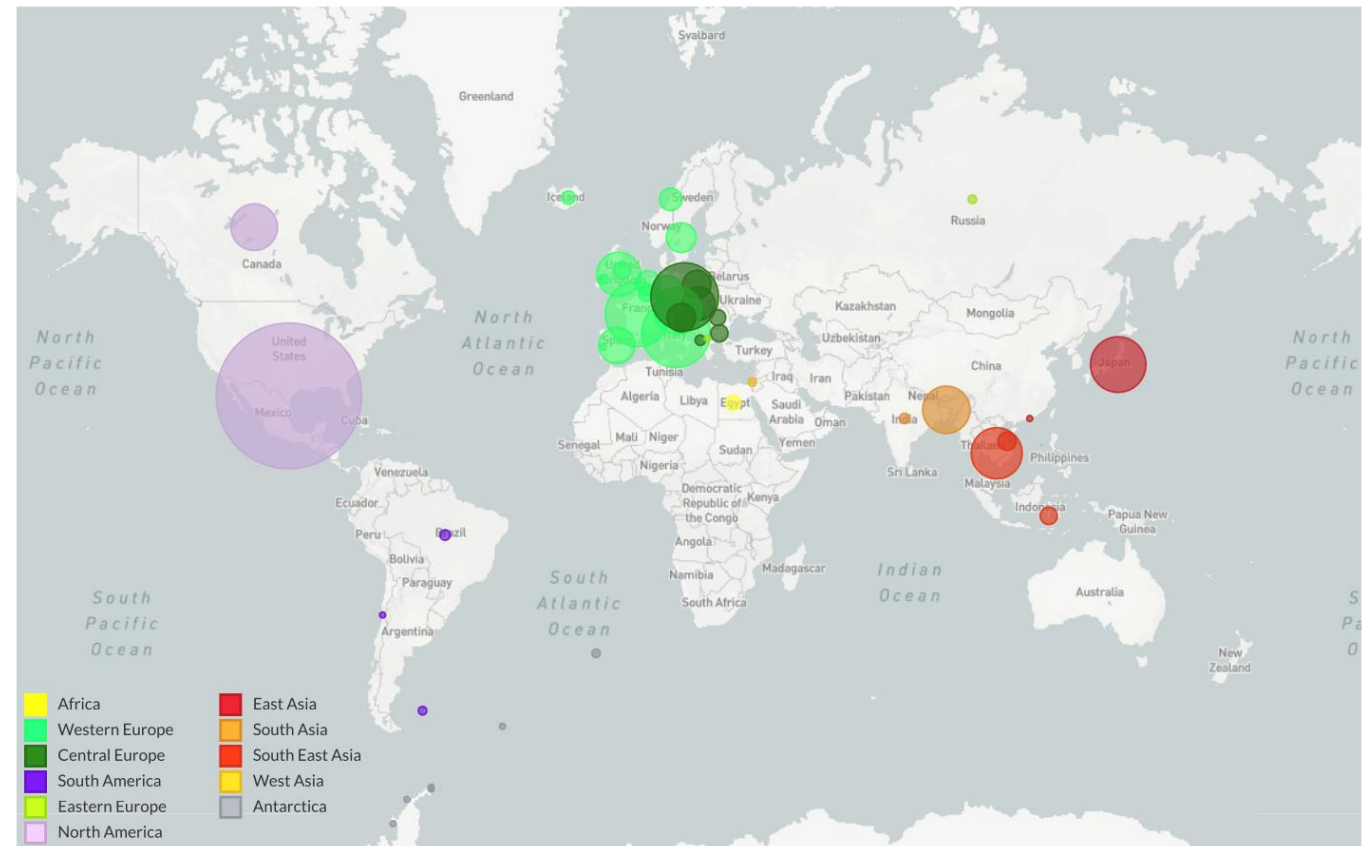


Figure. Map detailing geographic origin of virus sequences submitted to OFFLU for the February VCM 2025

Objective 3. To collaborate with the WHO on issues relating to the animal-human interface, including pandemic preparedness for early preparation of human vaccine



Vaccine Composition Meeting – supporting pre-pandemic preparedness for updating candidate vaccines for zoonotic influenza

Contribution to WHO TIPRA exercises (swine and avian viruses)



27 March 2023

Preliminary **FAO/WHO/WOAH Joint Rapid Risk Assessment**
Human infection with influenza A(H5N1), Cambodia (2023)

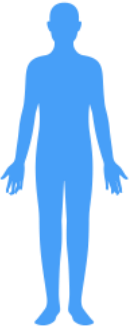
Background

As of 27 March 2023, two human cases of infection with avian influenza virus A(H5N1) virus have been confirmed in Cambodia. On 23 February 2023, Cambodia reported to WHO one confirmed fatal case of human infection with avian influenza A(H5N1) virus in a child. A second case, the father of the first case, was reported on 24 February 2023 and had mild illness. Both cases had onset of illness on the same day, and both had exposure to sick and dead backyard poultry. No further cases associated with this event or through other surveillance activities have been detected. There is no evidence of human-to-human transmission associated with this event given the information available at this time.

Limited, non-sustained human-to-human transmission of zoonotic influenza A(H5N1) viruses has been observed in past events and appears to be unusual.¹ Sustained human-to-human transmission of influenza A(H5N1) viruses has not been documented.



World Health Organization



Joint risk assessments for zoonotic threats (e.g., H5N1, H9N2, H3N8)



OFFLU avian data package for Zoonotic influenza VCM

September 2024 to February 2025

SCOPE

In this document we present a summary of avian influenza A virus events recorded from 1st September 2024 to 17th February 2025 and phylogenetic analysis of H5, H7, H9, H10 viruses.

OFFLU avian data package for Zoonotic influenza VCM

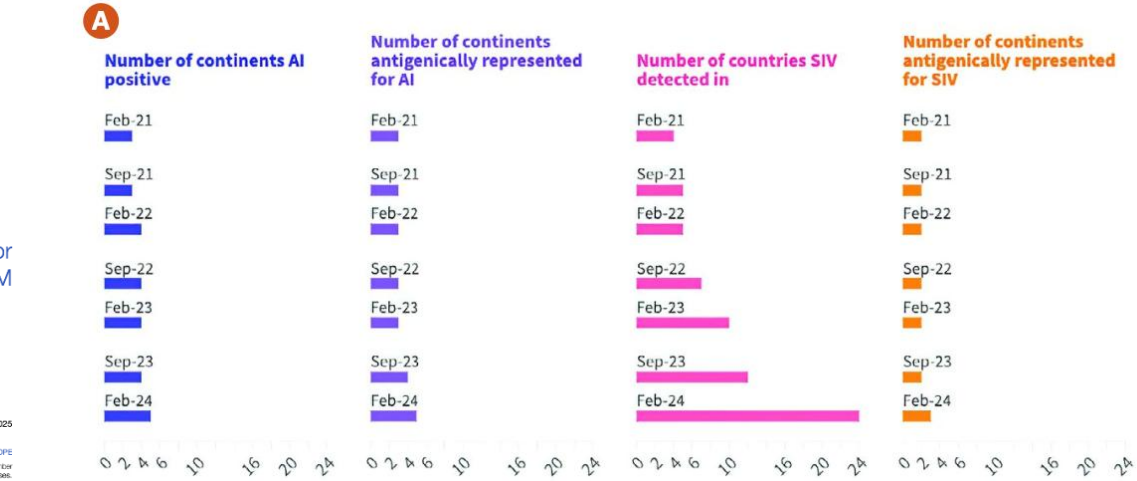


Figure. OFFLU VCM contributions over a four-year period

Objective 4. To highlight influenza surveillance and research needs, promote their development and coordination



Updating internationally harmonised nomenclature for influenza viruses

► [Emerg Infect Dis. 2024 Aug;30\(8\):e231176. doi: 10.3201/eid3008.231176](#)

Proposal for a Global Classification and Nomenclature System for A/H9 Influenza Viruses

[Alice Fusaro](#)^{1,2,3,4,5,6,7}, [Juan Pu](#)^{1,2,3,4,5,6,7}, [Yong Zhou](#)^{1,2,3,4,5,6,7}, [Lu Lu](#)^{1,2,3,4,5,6,7}, [Luca Tassoni](#)^{1,2,3,4,5,6,7}, [Yu Lan](#)^{1,2,3,4,5,6,7}, [Tommy Tsan-Yuk Lam](#)^{1,2,3,4,5,6,7}, [Zoe Song](#)^{1,2,3,4,5,6,7}, [Justin Bahl](#)^{1,2,3,4,5,6,7}, [Jiani Chen](#)^{1,2,3,4,5,6,7}, [George F Gao](#)^{1,2,3,4,5,6,7}, [Isabella Monne](#)^{1,2,3,4,5,6,7}, [Jinhua Liu](#)^{1,2,3,4,5,6,7}; The International H9 Evolution Consortium^{1,2,3,4,5,6,7}



26th February 2025

OFFLU Statement on the Development of a Global Consensus H5 Influenza Genotyping Framework

Since its inception in 2005, OFFLU (the WOAH-FAO network of expertise on animal influenza) has been closely monitoring the global impacts of avian influenza, including working with multiple countries and stakeholders affected by the current H5N1 HPAI panzootic. Field veterinarians and OFFLU scientists in FAO and WOAH designated influenza Reference Centres play a key role in responding to novel outbreaks and characterizing avian influenza (AI) viruses.

Highlight influenza surveillance and research needs, promote their development and coordination



A CONSULTATION TO DEVELOP A GLOBAL ANIMAL INFLUENZA RESEARCH AGENDA

Paris, 8-9 April 2014

OFFLU Strategy document for surveillance and monitoring of influenzas in animals

May 2013

OFFLU call to discuss AI in the Latin America and Caribbean region

Nov 27, 2023

[read more](#)

Sharing up to date scientific information with the community



OFFLU call to discuss Avian Influenza events in mammals
2 March 2023

OFFLU statement on HPAI in dairy cows

Apr 9, 2024

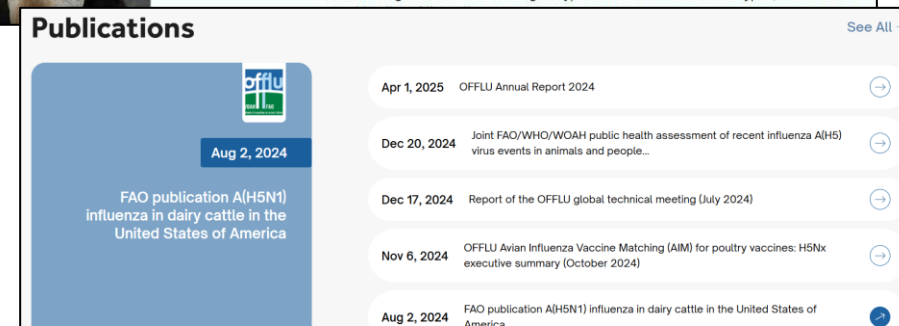
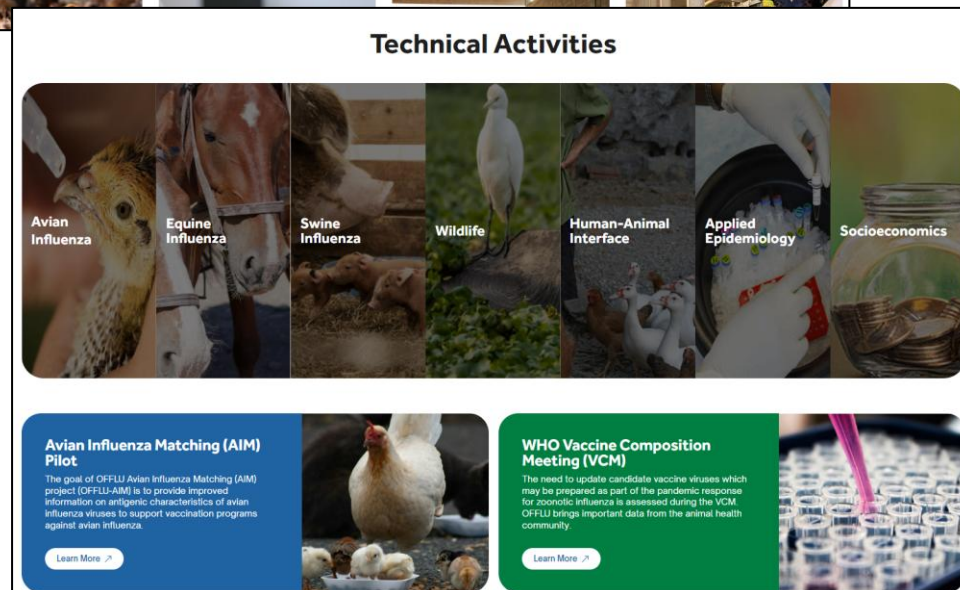
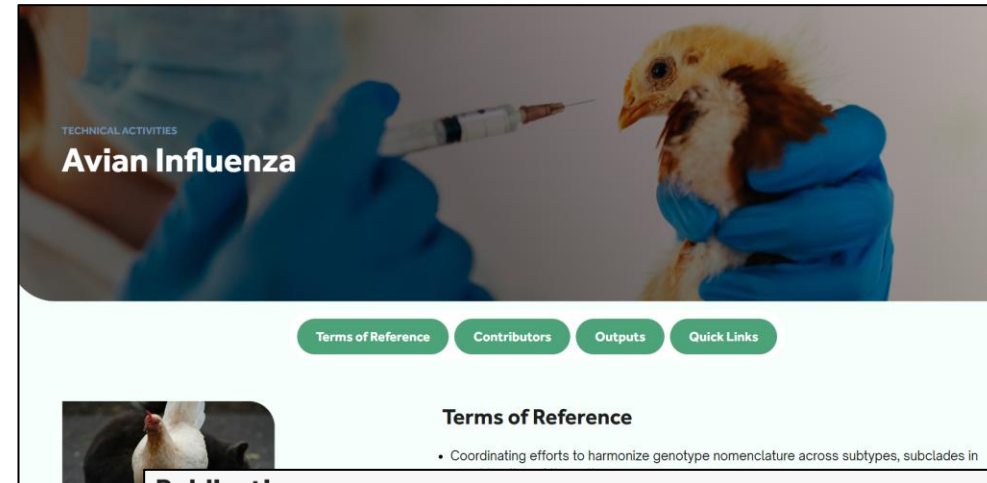
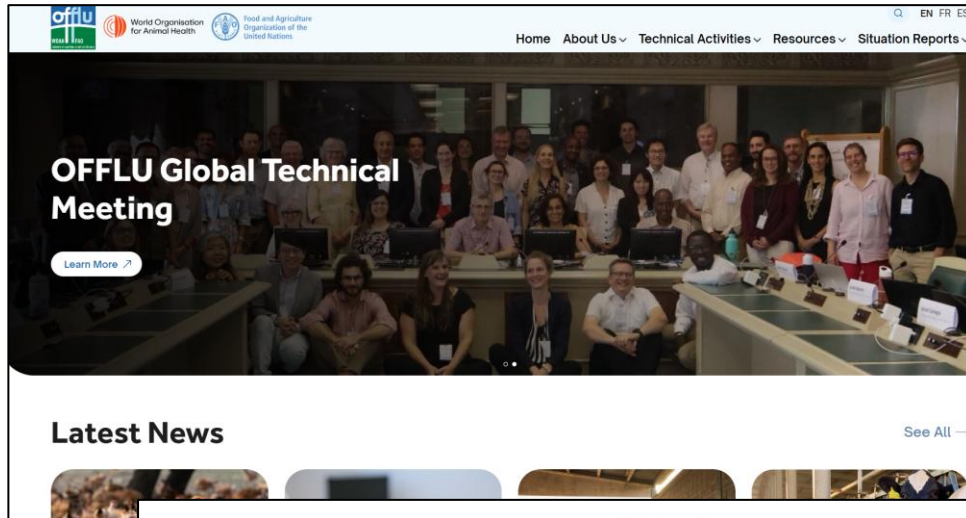
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OFFLU call for avian influenza and wild bird situation update

New OFFLU website is live!

www.offlu.org





Looking to the next 20 years...

OFFLU will continue to evolve—expanding partnerships, embracing new technologies, and strengthening our role in global animal and human health security



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health

Global strategy for the prevention and control of HPAI (2024 – 2033)



GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health

Inputs for the revision of the HPAI Global Strategy



Key discussions

Regional surveys, stakeholder mapping and regional discussions

Recommendations from the Regional Standing Group of AI Experts (SGE) for the Americas and Europe and Regional workshops Asia-Pacific

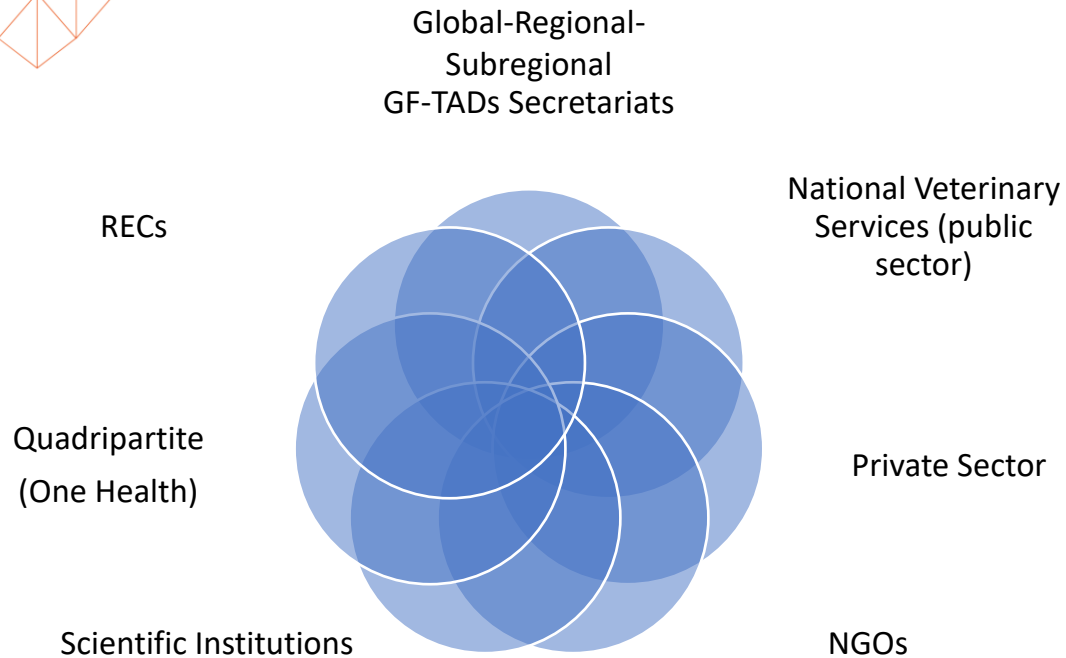
Recommendations from FAO Global Consultation on HPAI (May 2023)

Recommendations from the HPAI Animal Health Forum during the 90th WOA General Session (May 2023)
- Resolution 28 requested WOA, with FAO, update the Global Strategy on HPAI

Recommendations from Scientific Task Force on Avian Influenza and Wild Birds (July 2023)

Revision of the HPAI GS was guided by the evolving science and strategic discussions regarding tactical tools, approaches and collaborations needed at local, national, regional and interregional levels.

Inputs for the revision of the HPAI Global Strategy



Internal consultation within FAO /WOAH headquarters and regional offices - December 2023

External consultation involving global organisations and experts, regional partners, WOAH Members and FAO national officers in April 2024

Input received from 67 organizations:

- 82% from national level
- 57% from governmental organizations
- 16% from scientific organizations
- 33% Asia Pacific, 16% Americas, 28% Europe, 15% Africa, 1% Middle East

Objectives

- 1 **Prevent** HPAI epidemics, panzootics and negative impacts on biodiversity through multisectoral early detection and control
- 2 **Protect** poultry value chains, livelihoods, trade, and the health of humans, ecosystems, and other animals from avian influenza impacts
- 3 **Transform** poultry value chains to improve resilience to avian influenza and other disease threats.



Sphere of control | Outputs

Avian influenza risk monitoring and risk-based surveillance in domestic and wild animals supported and information shared across sectors (national, regional and global)

Laboratory diagnostic capacities for early detection, differentiation and identification of avian influenza viruses established/supported

One Health collaborative preparedness and response capacities to control HPAI outbreaks promoted

Biosecurity and other approaches to reduce HPAI risks along the poultry value chain and at the domestic animal-wildlife-human interface developed and promoted

HPAI vaccination stewardship guidance aligned to international standards developed and widely communicated

Guidance, training and advocacy tools developed, shared and implemented to promote the development of infection-free value chains and safe trade

One Health and private-public partnerships, policy, and legal frameworks and responsible investments promoted for building safe and resilient poultry value chains

Inter- and intra-regional and context-specific knowledge sharing on risk management facilitated

National strategies for ensuring sustainable and effective public and private veterinary services promoted

Transformative research such as the development of mass-applied HPAI vaccines and a novel surveillance system to provide an evidence base for policy change encouraged and supported

Sphere of influence | Outcomes

Circulating and newly emerged HPAI virus strains are detected and reported early, characterized, and resulting data and isolates shared through national and international networks (e.g., OFFLU)

HPAI outbreaks efficiently controlled including in LMICs through One Health collaborative efforts at the national, regional and global levels

Biosecurity implemented and scaled along the poultry value chain and at the domestic animal-wildlife-human interface supported by relevant regulations and legal frameworks

Vaccination using quality vaccines, ensuring antigenic relevance, as part of effective national and regional prevention and control programmes (when appropriate)

Capacities developed for maintaining safe trade and business continuity through the application of good practices and standards

Enabling policies promoting safe and sustainable poultry value chains including consideration of the risks assessed in the different chains

Long-term support to modify high-risk activities to ensure sustainable and resilient poultry production and value chains

Upstream drivers identified, spillover reduced, and transmission prevented through sustainable, collaborative One Health efforts

Reduced circulation and emergence of new HPAI virus strains

Reduced burden of HPAI virus on poultry value chains and trade

Greater cooperation, investment and partnerships in poultry value chains

Sphere of interest | Goal and objectives

Prevent HPAI epizootics, panzootics and negative impacts on human health and ecosystems through multisectoral early detection and control

Protect poultry value chains, livelihoods, trade and the health of humans, animals, and ecosystems from HPAI impacts

Transform poultry value chains to improve resilience to HPAI and other disease threats

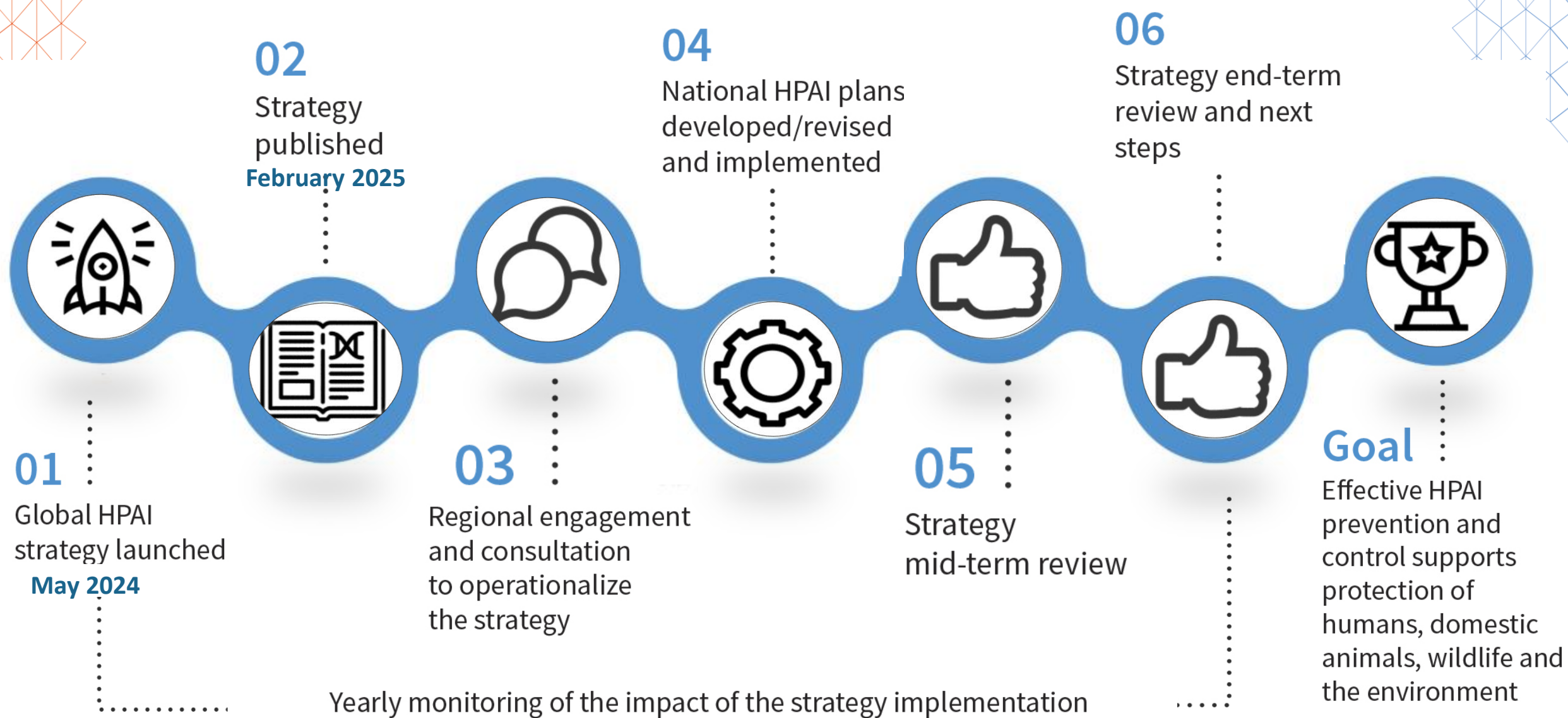
Substantially and sustainably reduce the impacts of HPAI on poultry, improve resilience of agrifood systems, safeguard ecosystems, and protect animal and human health

Assumption 1: Countries prioritize HPAI prevention and response capacity within national poultry health programmes.

Assumption 2: Countries are actively adopting a One Health approach as part of health security.

Assumption 3: Effective public-private relationships exist to enable livestock system transformation.

Next Step: Implementation Process of the HPAI Global Strategy



Global level - What actions are needed to achieve the objectives

Establish Governance Structure: Utilize existing mechanisms under the GF-TADS

Engage Partners: Collaborate with international public and private entities.

Communication Plan: Develop and launch a strategy awareness campaign.

Support OFFLU: Encourage countries to share HPAI data.

Develop Guidance and Standards: Facilitate the creation of control strategies and HPAI vaccination programs.

One Health Approach: Work with Quadripartite partners to operationalize One Health for HPAI prevention and control.

Sustainable Livestock Initiative: Support regions and countries to strengthen poultry value chains and enhance resilience to HPAI and other diseases.

Regional level - What actions are needed to achieve the objectives

Implement Strategy: Assist Members in implementing the strategy.

Strategy Communication: Facilitate the dissemination of the strategy and the development of HPAI action plans.

Engage Regional Committees: Work with GF-TADS Regional Steering Committees and other networks for cross-border collaboration.

One Health Platforms: Encourage collaboration with regional Quadripartite partners.

Promote Reporting and Information Sharing: Ensure timely, transparent reporting of HPAI and LPAI outbreaks, including genomic data, to WOA, FAO, OIE, and other partners

Develop Laboratory Networks: Facilitate the enhancement of laboratory capacities.

Identify Key Areas: Engage stakeholders to pinpoint crucial areas for poultry value chain transformation.



Implementation of the strategy – identify activities at regional level for each outputs

Objective 1: Prevent HPAI epizootics, panzootics and negative impacts on human health

Output 1.1: Avian influenza risk **monitoring and risk-based surveillance in domestic and wild animals** supported and information shared across sectors at the national, regional and global levels

Output 1.2: **Laboratory diagnostic capacities** for early detection, differentiation and identification of avian influenza viruses established and supported

Output 1.3: **One Health collaborative preparedness and response** capacities to control HPAI outbreaks promoted

Implementation of the strategy – identify activities at regional level for each outputs

Objective 2: Protect poultry value chains, livelihoods, trade and the health of humans, animals and ecosystems

Output 2.1: **Biosecurity and other approaches to reduce HPAI risks** along the poultry value chain and at the domestic animal–wildlife–human interface developed and promoted

Output 2.2: **HPAI vaccination stewardship guidance** aligned to international standards developed and widely communicated

Output 2.3: **Guidance, training and advocacy tools** are developed, shared and implemented to promote the development of infection-free value chains and safe trade

Implementation of the strategy – identify activities at regional level for each outputs

Objective 3: Transform poultry value chains to improve resilience to HPAI and other disease threats

Output 3.1: One Health and private–public partnerships, policy and legal frameworks and responsible investments promoted for building safe, resilient and sustainable poultry value chains

Output 3.2: Inter- and intraregional and context-specific knowledge sharing on risk management facilitated

Output 3.3: National strategies for ensuring sustainable, effective public and private veterinary services promoted

Output 3.4: Transformative research such as the development of mass-applied HPAI vaccines and a novel surveillance system to provide an evidence base for policy change encouraged and supported

Thank you

