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**Report on the  
regional consultative meeting on  
the prevention and control of  
highly pathogenic avian influenza  
in West Africa**

Accra, Ghana, 30 May–2 June 2023

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## EXECUTIVE SUMMARY

Highly pathogenic avian influenza (HPAI) is a serious contagious viral disease affecting several avian species. The disease is characterized by high morbidity and mortality and could be potentially contracted by humans and other warm-blooded animals thus making it an emerging pandemic of zoonotic importance. It impacts negatively on animal and human health, families' food security and nutrition, incomes of vulnerable groups including women, as well as national economies. The HPAI virus H5N1 was first officially reported in Africa in early 2006. Since the first outbreak in Nigeria, this virus has spread rapidly affecting 12 African countries, with outbreaks confirmed in wild migratory birds and domestic poultry. Currently, five West African countries are experiencing active outbreaks, with the virus becoming endemic in some countries. Considering the recurrence and alarming rapid spread of HPAI in the region and its attendant consequences, the Food and Agriculture Organization of the United Nations (FAO) Emergency Centre for Transboundary Animal Diseases (ECTAD), in collaboration with the Economic Community of West African States (ECOWAS) Regional Animal Health Centre (RAHC), organized a consultative meeting that brought together experts, farmer associations and the private sector to support the development of disease prevention and control strategies and policies, and contribute towards reducing pandemic risk.

The regional HPAI consultation meeting included plenary sessions, break-out group discussions, expert-led presentations and discussions on the current epidemiology of avian influenza, experiences with HPAI control and points for consideration concerning vaccination. Gaps, challenges and new approaches in avian influenza surveillance and diagnosis, prevention and control, the human-animal interface and pandemic preparedness were discussed. The meeting also addressed the ecology of avian influenza in wild birds and the interface between wild birds and domestic animals. Finally, participants developed a number of recommendations to address identified challenges and gaps in order to minimize the risk of HPAI in West Africa.

The waves of HPAI outbreaks in West Africa have been reported to be caused predominantly by the HPAI H5N1 clade 2.3.4.4.b linking to migratory wild birds. This calls for the strengthening of collaboration between the animal health, wildlife and environment sectors under a One Health approach for effective and sustainable control of the disease. Key recommendations developed at the end of the meeting to address identified gaps and strengthen the prevention and control of HPAI in the region include the instituting of insurance for poultry linked to biosecurity implementation, community sensitization to enhance reporting, strengthening of on-farm biosecurity using the Progressive Management Pathway for Terrestrial Animal Biosecurity (PMP-TAB) platform, consideration of vaccination strategies, and the establishment of emergency stockpiles of essential supplies. This report summarizes the points discussed during

the meeting, the proposed solutions to identified gaps, and the key recommendations and next steps required to reduce the risk of HPAI in West Africa.

## ACRONYMS AND ABBREVIATIONS

AHEms	Animal health emergencies
ANSES	Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (Agency for Food, Environmental and Occupational Health and Safety)
AU-PANVAC	African Union-Pan African Veterinary Vaccine Centre
CVO	Chief veterinary officer
ECTAD	Emergency Centre for Transboundary Animal Diseases
ECOWAS	Economic Community of West African States
EMC	Emergency Management Centre
FAO	Food and Agriculture Organization of the United Nations
GEMP	Good Emergency Management Practice
GDP	Gross domestic product
HPAI	Highly pathogenic avian influenza
H5N1	H5N1 subtype of the avian influenza virus
ICG	Incident Coordination Group
IZSve	Istituto Zooprofilattico Sperimentale delle Venezie (Experimental Zooprophyllactic Institute of the Venezie)
PPEP	Progressive Pathway for Emergency Preparedness
PMP-TAB	Progressive Management Pathway for Terrestrial Animal Biosecurity
RAHC	Regional Animal Health Centre
USAID	United States Agency for International Development
WHO	World Health Organization
WOAH	World Organisation for Animal Health

## INTRODUCTION

The HPAI virus, subtype H5N1, was first detected in the West Africa region with outbreaks confirmed among commercial poultry flocks in Nigeria in February 2006. Within a period of six months the infection had spread across the region, with outbreaks confirmed in eight countries among various domestic poultry populations and sedentary wild bird species. By the end of 2007, most countries had effectively controlled the infection due to extensive surveillance with the support of national governments and international resource partners, which enabled compensation for depopulation of infected flocks. The availability of compensation for affected poultry farms ensured rapid reporting of suspected cases for confirmation and immediate implementation of control measures. By the end of the year 2008, no new avian influenza outbreaks were reported in the region.

However, after seven years of no indication of infection in domestic poultry populations in the region, the virus re-emerged in 2015 with outbreaks confirmed to be due to the H5N1 subtype in domestic poultry and H5N8 subtype in migratory wild birds in Nigeria. By 2018, there were reports of avian influenza in domestic poultry, with the H9N2 subtype being confirmed as the virus responsible for the outbreaks in the region. These infections have not been effectively controlled as outbreaks are being reported in Benin, Côte d'Ivoire, Ghana and Senegal.

In December 2020, HPAI due to the H5N1 subtype was confirmed for the first time in Senegal on a commercial poultry farm. In January 2021, the infection was reported in wildlife, with wild migratory pelicans affected and leading to the death of over 850 birds. Similar cases were reported in Mauritania in a national park along the border with Senegal. This was followed by confirmed outbreaks of HPAI H5N1 in a backyard poultry farm in the State of Kano, Nigeria on 29 January 2021. In the same year, outbreaks were confirmed in many countries in the region including Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, the Niger and Togo and resulting in the mortality of huge numbers of poultry, adversely affecting an already vulnerable industry and threatening livelihoods.

This catalogue of events since the first incursion of HPAI H5N1 into the region in 2006 reveals a recurrence of the infection with its attendant consequences. The current wave of the infection seems to be spreading rapidly within and between countries and is a consequence of a number of factors, including the following:

- Poor implementation of on-farm biosecurity measures.
- Lack of early warning surveillance for the early detection and containment of HPAI incursions.
- Weak national animal health delivery systems compounded with poor public sensitization and inefficient disease detection and control at the borders, based on the risk of spread and taking into consideration transboundary movements.

- Lack of government support and timely compensation.

All these factors have led to a general mistrust of the animal health delivery systems among poultry farmers, the consequence of which is the reluctance to report suspected cases in a timely manner and the tendency to conduct the uncontrolled and unregulated vaccination of poultry. It is therefore imperative that concerted efforts are taken immediately to ensure the effective and sustainable prevention and control of HPAI in the ECOWAS region to safeguard public health, improve poultry production and protect livelihoods, especially among vulnerable groups such as women and children. The regional consultative meeting was therefore organized for stakeholders to share information and best practices in HPAI prevention and control to contribute to minimize the risk of disease occurrence and spread.

## SESSIONS

### DAY 1 (30 MAY 2023)

The regional consultative workshop on the prevention and control of HPAI in West Africa was held from 30 May to 2 June 2023 in the Alisa Hotels in Accra, Ghana. The hybrid meeting (combining face-to-face and online participation) gathered 75 participants, including chief veterinary officers (CVOs) and heads of national epidemiology units of 15 countries, directors of national laboratories, representatives of poultry farmers associations and private veterinarian associations, and development partner organizations (FAO, ECOWAS RAHC, West African Health Organization, Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail [Agency for Food, Environmental and Occupational Health and Safety] [ANSES], Interstate School of Veterinary Sciences and Medicine of Dakar, World Organisation for Animal Health [WOAH], African Union-Pan African Veterinary Vaccine Centre [AU-PANVAC], United States Agency for International Development [USAID], Istituto Zooprofilattico Sperimentale delle Venezie [Experimental Zooprophyllactic Institute of the Venezie] [IZSVe]).

The specific objectives of the meeting include: i) to discuss the current situation and control practices for HPAI; ii) to share experiences and identify key actions for controlling the disease in the ECOWAS subregion and other African regions; iii) to share the latest updates and progress made on HPAI vaccination and its challenges; iv) to assist countries to develop national biosecurity action plans using the FAO PMP-TAB; v) to strengthen the capacity of ECOWAS Member Nations and RAHC concerning incident management; and vi) to develop recommendations and agree on a road map for updating the HPAI control strategy for West Africa.

## Opening ceremony

The regional consultative meeting started with an official opening ceremony, graced by the presence of esteemed dignitaries, including representatives from international organizations (FAO, WOAAH, WHO and ECOWAS), the United Nations Regional Coordinator in Ghana and the representative of the Honourable Minister for Food and Agriculture in Ghana, who officially opened the meeting.

Abebe Wolde, the Acting Regional Manager of FAO ECTAD for West and Central Africa (WCA), began by introducing the meeting objectives. He emphasized that HPAI is a serious highly contagious viral disease that has far reaching implications for both animal and human health, as well as national economies, affecting the livelihoods of many people who depend on poultry farming. He highlighted the disease's recent expansion into new geographical areas with over 60 percent of countries in West Africa now affected by HPAI and five countries currently experiencing active outbreaks. The meeting, organized by FAO in collaboration with ECOWAS RAHC and funded by USAID, aimed to facilitate the sharing of experiences on HPAI management, identify key actions for disease control, discuss the possibility of implementing vaccinations, and assist countries in developing biosecurity action plans using the FAO PMP-TAB protocol.

The FAO Deputy Regional Representative for Africa and FAO Representative for Ghana, Yurdi Yasmi, underscored FAO's support to countries in preventing and controlling HPAI. He reiterated the impact of HPAI in the West African region and encouraged the adoption of appropriate sanitary measures for the effective control of the disease. He urged participants to consider the recommendations from the recent global consultative meeting on avian influenza held from 2 to 4 May 2023 in Rome and reiterated FAO's commitment to support the implementation of the recommendations that will come out of this meeting.

Bachir Souley Kouato, speaking on behalf of WOAAH, highlighted the previous discussions on HPAI during the WOAAH Open Session and advocated for a sustainable surveillance system that enables early detection of the disease.

Remarks on behalf of the WHO Representative in Ghana were made by Sally Ohene. She provided a brief overview of the HPAI situation in Ghana and its control efforts, emphasizing the importance of strengthening collaboration and coordination among human and animal health through effective emergency management practices and collaborative surveillance.

Guyo Agana, speaking on behalf of the United Nations Regional Coordinator in Ghana, expressed his profound appreciation to FAO, ECOWAS and USAID for creating a convenient platform to discuss and find solutions to address HPAI, which is a disease of the utmost importance. He briefly outlined the United Nations Sustainable Development Cooperation Framework 2023–2025 and highlighted the United Nations' ongoing efforts to control the disease in Ghana.

Speaking on behalf of ECOWAS, Eugene Koffi Kouassi, emphasized the significance of livestock in the gross domestic product (GDP) of West African countries. He highlighted the mandate of RAHC, and commended the collaborative efforts between ECOWAS, FAO and other partners,

such as AU-IBAR, WHO, WOA, World Bank, etc., in the fight against animal diseases in West Africa.

Jonathan Amakey-Anim, representing the Honourable Minister for Food and Agriculture in Ghana, delivered an opening statement providing an overview of HPAI outbreak management in Ghana. He mentioned the release of emergency funds by the Government of Ghana for compensation of farmers and acknowledged the support provided by development partners, including FAO, for disease prevention and control of the disease in the country.

## Session 1: Experience in HPAI prevention and control in West Africa

This session was facilitated by Charles Bebay, FAO ECTAD Regional Manager for East and Southern Africa. The following presentations were made:

- The first presentation, providing an overview of the poultry value chain and HPAI risk drivers in ECOWAS, was made by Lionel Gbaguidi, Animal Health and Production Officer, FAO Subregional Office for West Africa.
- The second presentation, on HPAI in West Africa, was presented by Bachir Souley Kouato from WOA.
- The third presentation, focusing on the regional control strategy control for HPAI: components, coordination mechanism, implementation, challenges and lessons learned, was presented by Eugene Koffi Kouassi from ECOWAS RAHC.

These presentations highlighted the following key points: The total number of tropical livestock units in West Africa exceeds 100 million, contributing around 8-15 percent to the GDP and 44 percent to the agricultural GDP. The poultry production system is mostly backyard farming, accounting for approximately 70 percent of the total poultry population. Poultry serves as a significant source of animal protein, with West Africa relying on it for 32.9 percent of the protein supply per capita per day. It was stressed that the development of the poultry industry can generate tens of millions of job opportunities for youth, women and retired civil servants. Therefore, the sustainable development of poultry is vital to food security and nutrition, as well as public health.

Biosecurity on farms is minimal in village or backyard chicken farming, moderate in semi-intensive farms, and high in intensive farms established mainly within and around urban areas for commercial purposes. Identified risk drivers for HPAI in the region include wild migratory birds, which are the primary source of HPAI introduction.

Additional risk factors include trade in live poultry and poultry products, with the most important being weak biosecurity measures along the poultry value chain. The lack of appropriate information systems (mapping and characterization of the different value chain actors) and



sustainable surveillance systems contributes significantly to the introduction and spread of the disease.

It was highlighted that, following the first waves confirmed in 2005–2006, there has been a recurrence of the disease, with the most recent outbreaks reported in 2020–2023 affecting both wild birds and domestic poultry populations – with the H5N1 subtype of the avian influenza virus confirmed as the virus involved in nearly all the outbreaks. The RAHC reiterated that its mandate includes the coordination of initiatives for the control of transboundary animal diseases (TADs) and zoonoses, thereby improving animal welfare in the region and noted that a regional strategy for the prevention and control of HPAI has been developed but has not been operationalized.

## Session 2: Panel discussions

Following the plenary presentations, the CVOs, representatives of the poultry farmers associations and private veterinarians shared their experiences concerning HPAI prevention and control in their respective countries.

The first panel of speakers consisted of the CVOs from Côte d'Ivoire, Ghana, the Niger and Senegal, who shared their experiences on measures adopted to prevent and control outbreaks in their respective countries. They also discussed the main challenges encountered in disease control, proposed solutions to enhance HPAI management and provided recommendations to address policy gaps.

Ghana has faced HPAI outbreaks in multiple years including 2007, 2015, 2016, 2018 and 2021. These outbreaks affected farms across seven regions resulting in the culling of 1 042 689 birds. Each time an outbreak occurred, it appeared to be more virulent, resulting in high mortalities. The disease spread rapidly because of poor biosecurity practices on farms and the lack of preparedness (logistics, laboratory diagnostic capacities, and human resources and funding).

In Côte d'Ivoire, the first outbreak was confirmed in 2006. Since then, outbreaks have been reported every year. Outbreaks were successfully controlled through the implementation of various actions including legal reforms, the establishment of surveillance activities, community involvement and strong public-private partnership. However, implementing compensation for culled poultry has proven to be a significant challenge.

The Niger experienced outbreaks of the disease mostly in the backyard/free-range system. Due to the relatively fewer cases reported, response activities have always been prompt, leveraging the One Health sector budget for compensating affected farmers. Farmers were educated on how to prevent incursions of the disease. Partner organizations have also provided support for the proper disposal of carcasses. The biggest challenge the country faces, however, is inadequate human resources at the border and also the lack of border inspection posts.

Senegal recorded its first outbreak of HPAI in 2020, but swift control measures were implemented due to the high level of preparedness and response planning in place. These measures included the development of standard operating procedures for the management of carcasses, capacity building for all using the multisectoral approach and simulation exercises

ranging from tabletop to field simulation exercises. The Government of Senegal has strong ties with all sectors that deal with birds.

The second panel was composed of CVOs from Ethiopia, Mozambique and Uganda. They discussed possible pathways for the introduction of HPAI in their respective countries, changes observed in terms of risk factors, reasons for not having any suspected cases – given the HPAI situation in the continent – their prevention efforts and challenges.

From the panel discussion it was revealed that trade (legal and/or illegal), the importation of day-old chicks and poultry products, and migratory birds are potential risk factors for the introduction of the disease. The panel acknowledged that climate change may have an impact on the migratory pattern of birds, which could affect the spread of the disease. The increase in the number of value chain actors and the volume of trade has changed the patterns of risk factors. In terms of preventive efforts, the panel emphasized the importance of training, sensitization and preparedness measures.

The third panel discussion included representatives of the poultry farmers associations from Burkina Faso, Ghana and Nigeria, and private veterinarians from Benin and Côte d'Ivoire. Their discussion focused on the roles they play in the prevention and control of HPAI, the implementation of biosecurity measures on poultry farms, the main challenges encountered and the solutions implemented to address those challenges. It was noted that the poultry farmers associations primarily contribute to HPAI control through training programmes that promote the implementation of best biosecurity practices along the poultry value chain. On the other hand, the level of involvement of private veterinarians varies according to the ratio of their numbers compared to the numbers of public veterinarians. In Benin, where the number of private veterinarians is almost four times higher, they are extensively engaged in all activities related to HPAI control, with their field interventions only limited by resource constraints. In Côte d'Ivoire, where private veterinarians receive adequate logistical support, they are at the forefront of the early detection of the disease using rapid detection tests. Overall, the panel discussion shed light on the important roles played by poultry farmers associations and private veterinarians in HPAI prevention and control efforts. Their experiences and solutions provided valuable insights for improving biosecurity practices and enhancing the early detection of the disease.

## Best practices shared/lessons learned

The panel discussions highlighted the following best practices/lessons learned:

- The need for legal reform.
- The efficiency of public-private partnerships in the control of HPAI.
- The involvement of communities in awareness creation.
- The value of intersectoral collaboration and joint surveillance.
- The use of social media (WhatsApp groups) for sharing information and best practices (through videos).
- The utilization of rapid detection tests for early warning.

The challenges the groups encountered in the control of HPAI included:

- A lack of budgetary allocations for animal health emergencies.
- The absence of a formal subregional coordination mechanism for the prevention and control of TADs and zoonosis, including HPAI.
- The lack of or insufficient enforcement of laws and regulations for the prevention and control of HPAI.
- The lack of/poor biosecurity measures along the poultry value chain.
- Weak early warning systems and disease surveillance.

## DAY 2 (31 MAY 2023)

### Session 3: Vaccination against HPAI

The day's activities began with a recap of the proceedings of Day 1, after which Session 3 started with presentations focused on the subject of vaccinations against HPAI. Three presentations were made on this topic:

- 1) HPAI in West Africa: molecular evolution and emerging threats, which was made by Isabella Monne from IZSve.
- 2) Review on HPAI vaccination on mule ducks, presented by Béatrice Grasland from ANSES.
- 3) Vaccine quality, matching and monitoring, presented by Charles Bodjo from AU-PANVAC.

These presentations provided an overview of the HPAI situation in Africa, noting that over 27 countries have confirmed the presence of the disease in animals since 2005 – with persistent circulation of the virus in West Africa for many years. The 2020/2021 and 2021/2022 seasonal waves affected several countries in the region, with some reporting the disease for the first time (Guinea, Mali, Mauritania and Senegal). The main route of introduction of HPAI into West Africa has been noted to be mainly through wild migratory birds and countries were encouraged to maintain surveillance, high on-farm biosecurity and timely reporting of incursions. Once

introduced, the virus spreads rapidly in the region. A total of 163 sequences were performed on samples from ten West African countries in 2021. The results showed that the viruses were the subtype H5N1 that belongs to clade 2.3.4.4b and overall clustered among themselves indicating the circulation of the same virus within the region. During the epidemic wave in 2021–2022, a new H9N2 subtype was detected in Burkina Faso and Nigeria. In 2023, a new H5N1 genomic variant that belongs to the H5N1 A/gull/France/22P015977/2022-like genotype, which originated from reassortment events, was identified in wild birds in Senegal. This virus has mutations, spreads very quickly, affects mainly wild birds and caused a high mortality rate in Mauritania. West Africa is an area open to the introduction of the HPAI virus with possible resurgences due to virus mutations. Avian influenza is becoming panzootic in Central and South America – 121 outbreaks in poultry, 144 outbreaks in captive birds and 186 cases in wild birds were reported between 1 October 2022 and 19 May 2023. In Europe, 2 701 HPAI detections were found in 28 countries in 2022–2023.

Vaccination against HPAI is now possible in the European Union legal framework and some trials have been conducted. The following are the conclusions of the vaccination trial against A (H5N1) HPAI of clade 2.3.4.4b: Vaccination can lead to a significant reduction in clinical disease and shedding of the virus in vaccinated animals. However, there was less reduction after the viral challenge at 11 weeks of age compared to seven weeks of age with similar results and good control of direct transmission, but there is a need to assess transmission parameters after the 11-week-old viral challenge. All the vaccines tested reduce the spread of the virus in ducks. It is important to test any HPAI vaccine intended for use in the field to ensure it matches the circulating strains (vaccine matching studies). However, virology surveillance to detect any mutants and other viruses is recommended after vaccination.

Charles Bodjo noted that AU-PANVAC is a WOAHC-collaborating centre for the quality control of veterinary vaccines produced or imported into Africa. It is ISO 9001 certified and is ISO 17025 accredited for the quality control testing of vaccines. So far, the centre receives vaccines from African vaccine-producing laboratories, from CVOs, non-governmental organizations and vaccine producers from Europe, the Near East and the United States of America. Some 82 percent of the vaccines tested at AU-PANVAC annually are sourced from Africa. Out of the vaccines tested between 2018 and 2022, the *peste des petits ruminants* vaccine constituted 29 percent of the total number of vaccines, while the contagious bovine pleuropneumonia vaccine represented 18 percent. The results indicate that 90 percent of tested vaccines were of good quality. Very few HPAI vaccines have been tested. Only six batches of avian influenza vaccines were received from 2018 to 2022. AU-PANVAC will support any country wishing to vaccinate, with the organization providing this evaluation as per its continental mandates.

## Session 4: Panel discussion of laboratory directors

The next session was a panel discussion involving laboratory directors sharing their experiences on HPAI virus detection, characterization, challenges faced, the possibility of setting up an emergency stockpile of essential requirements and the prospects for the future. It was revealed that all laboratories have the capacity to diagnose HPAI by serology and molecular techniques with well-trained staff. The intermittent supply of urgently needed reagents and consumables was noted to be a challenge in all laboratories, except in Côte d'Ivoire where the government has put in place a budget line representing a fivefold increase in the funds allocated to reagents and consumables. All laboratory directors agreed that the establishment of an emergency stockpile of essential reagents and consumables in the region will facilitate the rapid detection of any suspected cases of HPAI. They stated that the challenges faced were similar for all of the laboratories.

The laboratory directors outlined the following challenges, which impact the effective diagnosis of HPAI:

- Intermittent supply or shortage of reagents and consumables
- Logistical challenges related to the transportation of samples from the field to laboratories
- Unstable power supplies
- Timely calibration and maintenance of equipment
- Lack of a biobank for the preservation of biological samples
- Inappropriate laboratory waste management systems
- Ineffective intersectoral collaboration

## Session 5: Vaccination experience sharing

Les Sims and Mohamed Ahmed Ali shared their respective experiences with HPAI vaccination in Asia and Egypt. The key points highlighted included that a decision must be made on the use of routine vaccination to protect livestock when the same virus is found continuously in a country. Vaccination has no impact on trade. It just helps to mitigate cases of new infections. The vaccine must be used according to the manufacturer's requirements and according to the epidemiological evolution of the disease in the country. In China, transmission to humans has significantly decreased thanks to vaccination against H5N9. The HPAI disease appeared in Egypt in 2006 in 13 localities with notifications of human cases. The phylogenetic analysis of the virus showed that the circulating strain in Egypt originated from China and was introduced through migratory birds. To date, nearly 25 vaccines have been used against HPAI.

David Castellan made an informative presentation on the vaccination planning tool for avian influenza. He noted that the avian influenza vaccination planning tool is a decision-making tool

recommended by FAO and WOAHA to guide countries in planning vaccination policies and practices. He then outlined the development process for the tool, its structure and the key questions the tool addresses. The criteria were noted to consist of eight planning clusters, 37 planning elements and 303 referenced planning criteria. It is linear-based (not decision-based) tool that employs the Socratic method, which involves asking a series of questions, with the result that the respondent comes either to the desired knowledge by answering the questions or to a deeper awareness of the limits of knowledge. The tool asks the following key questions:

- Should vaccination be included as part of a national disease control strategy?
- What should be expected from vaccination in terms of disease prevention and control?
- Which factors are most important when deciding whether to conduct vaccination?
- What are the requirements for developing realistic vaccination policies and practices?
- What are the consequences (costs/benefits) and impacts associated with instituting a vaccination policy?

The tool was tested in Bangladesh. Based on the results, vaccination planning provides a structured approach for decision-makers to develop their national vaccination programme for HPAI as part of an overall strategy for the progressive reduction and control of endemic influenza viruses in poultry.

The following lessons learned were shared through the above-mentioned presentations:

- Vaccination alone is not enough to prevent the disease. It must be accompanied by biosecurity on farms.
- Each country must decide on vaccination based on the epidemiological realities of that country.
- Any new vaccine used in Africa should be based on circulating strains and evaluated to determine its efficacy. AU-PANVAC, as per its continental mandates, will contribute to such evaluation.
- A collaboration between veterinary services and AU-PANVAC is needed to identify and destroy counterfeit vaccines.
- There are two waves of the introduction of the HPAI virus in West Africa: the Nigeria-Côte d'Ivoire wave and the Senegal-Liberia-Gambia wave.

## DAY 3 (1 JUNE 2023): BIOSECURITY

On the third day, the focus of the discussion centred on biosecurity. In the afternoon, the participants engaged in group discussions to identify challenges and gaps in the prevention and control of HPAI in West Africa. The aim was to formulate recommendations that would help strengthen the efforts in preventing and controlling the disease in the region.

PMP-TAB was presented by Madhur Dhingra, the Head of the FAO Emergency Prevention System for Animal Health. She noted that FAO PMP-TAB is a collaborative, stepwise approach to assessing and managing biological risks supported by the provision of appropriate tools with shared public-private responsibilities. It includes planning policies, laws, regulations, institutional frameworks, guidelines and field interventions. Its objective is to enhance community resilience and promote sustainable terrestrial animal sectors by strengthening biosecurity management for terrestrial animals at enterprise, community and national levels. The pathway consists of four steps, and a country may enter at any of the first three steps depending on its biosecurity situation. Countries will enter Step 1 when considering piloting biosecurity initiatives and Steps 2 to 3 when seeking to expand existing biosecurity initiatives. She highlighted that six Virtual Learning Centers (VLCs) have been established with FAO Regional and Subregional Offices, with a seventh one to be set up in West Africa. These VLCs will support and coordinate regional roll outs of innovative virtual learning solutions and can guide the implementation of PMP-TAB.

The next presentation was by Frederic Poudevigne from the FAO Emergency Management Centre (EMC), which was an introduction to the farm-level biosecurity assessment tool. He stressed the need for a dedicated biosecurity tool to identify and assess biosecurity practices, risks, interests and benefits (Step 1 of the FAO PMP-TAB), to monitor and pilot biosecurity initiatives (Step 2 of the PMP-TAB) or to promote and advocate for biosecurity (all levels). He noted that two tools are being developed by a team of FAO and other experts to support the FAO PMP-TAB. These include the following:

- An assessment tool on biosecurity measures on small-scale farming units (sectors 2 and 3), interconnecting small-scale farmers and local veterinary services.
- A training tool to enable simple and effective training, adaptable to country contexts (during peacetime, alerts or emergencies).

The third topic focused on biosecurity measures in the control of HPAI outbreaks in domestic and wildlife birds and was presented by Mireille Kadja from the Interstate School of Veterinary Sciences and Medicine of Dakar. She highlighted the crucial role of avian species in HPAI epidemiology, with 374 species of wild birds infected worldwide. Biosecurity measures primarily involve isolation, cleaning and disinfection. The management of the outbreaks of HPAI in Senegal was based on the following areas of intervention:

- Coordination based on a One Health approach for the mobilization of resources
- Outbreak control operations and habitat restoration
- Communication and awareness creation

## Session 6: Working group session

Two break-out groups were formed, which included an anglophone group and a francophone group made up of the corresponding countries:

- 1) Anglophone group: Ethiopia, Gambia, Ghana, Liberia, Mozambique, Nigeria, Sierra Leone and Uganda.
- 2) Francophone group: Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, Mali, Niger, Senegal and Togo.

Facilitators were designated to assist in the group discussions, and within each group a chairman and a rapporteur were appointed by the participants.

The objectives of the group discussions were as follows:

- Identify the main challenges for HPAI prevention and control at country and regional levels.
- Propose key actions and solutions for improving HPAI prevention and control at country and regional levels.
- Propose recommendations for updating the regional HPAI prevention and control strategy in West Africa.
- Identify relevant recommendations from the global consultative meeting on HPAI for implementation in West Africa.

Table 1 presents the summarized results of the group discussions regarding the challenges for HPAI prevention and control at both regional and national levels.

**Table 1: Identified challenges to HPAI control in West Africa**

Identified challenges	Reasons for the challenge
Lack of effective early warning system and rapid detection of HPAI	<ul style="list-style-type: none"><li>• Poor disease reporting, including weak surveillance systems</li><li>• The type of production systems – backyard and semi-intensive systems</li><li>• Inadequate human, financial and material resources</li><li>• Screening tests for early confirmation of cases</li><li>• Knowledge gaps of farmers at the production level</li><li>• Inadequate veterinary extension services for farmers</li><li>• Inadequate diagnostic capacities for early detection, including sample collection, transportation and testing</li><li>• Inadequate transport infrastructure in the poultry sector</li><li>• Weak enforcement of movement control and veterinary certification</li><li>• Tracing forward and backward of manure merchants</li><li>• Sentinel surveillance of wild birds</li><li>• Unregulated live bird markets</li></ul>



Ineffective implementation of biosecurity measures	<ul style="list-style-type: none"> <li>• Inadequate awareness of farmers and unwillingness to implement proper biosecurity measures along the value chain</li> <li>• Poor regulation of the poultry industry (the land tenure system, site selection, housing, etc.)</li> <li>• Inadequate standard guidelines for biosecurity</li> </ul>
Stamping out of affected flocks without commensurate compensation	<ul style="list-style-type: none"> <li>• Inadequate policies for stamping out and compensation</li> <li>• Farmers' unwillingness to take out insurance policies</li> <li>• Insurance companies not accepting to give insurance policies to farmers due to the sector's high risks</li> <li>• Lack of national policy of insurance against HPAI</li> </ul>
No effective vaccination against HPAI	<ul style="list-style-type: none"> <li>• Matching the circulating strains with vaccines</li> <li>• Use of local isolates in vaccine development</li> <li>• Countries not convinced about vaccination as a control measure</li> <li>• Lack of capacities of countries to differentiate between vaccinated and infected birds</li> <li>• Inadequate cold chain facilities (power shortages, infrastructures, storage, etc.)</li> <li>• Lack of information of numbers of animals in countries (outdated census and animal figures)</li> </ul>
Lack of effective community awareness creation on HPAI to enhance early reporting	<ul style="list-style-type: none"> <li>• Uncoordinated public awareness campaigns</li> <li>• No multidisciplinary groups to conduct awareness campaigns</li> <li>• Inadequate stakeholder engagement</li> <li>• No communication strategies</li> </ul>
No resource mobilization	<ul style="list-style-type: none"> <li>• Donor fatigue</li> <li>• No dedicated emergency funds at the national or regional levels</li> <li>• Very weak public-private partnership</li> <li>• Inadequate stockpiles of emergency requirements</li> <li>• Poor advocacy (inadequate studies on cost-benefit analysis and evidence-based resource mobilization)</li> </ul>
No effective public-private partnership at national levels	<ul style="list-style-type: none"> <li>• Weak One Health governance structures at subnational level</li> <li>• Weak private sector engagement</li> <li>• Lack of simulation exercises</li> </ul>
Lack of regional coordination on HPAI control	<ul style="list-style-type: none"> <li>• No avian influenza coordinating body at ECOWAS RAHC</li> <li>• No designated focal point/person for HPAI at the country level</li> <li>• No timely information-sharing platform for Member Nations</li> <li>• Weak coordination and mapping of relevant development partners</li> </ul>

	<ul style="list-style-type: none"> <li>• Lack of standing technical advisory teams at the regional level</li> <li>• No emergency management centres at the national level</li> </ul>
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The break-out groups then proposed solutions to the corresponding identified challenges impacting the effective control of HPAI in West Africa, as outlined below (Table 2).

**Table 2: Proposed solutions to identified gaps in HPAI control**

Identified challenges	Proposed solutions
Lack of effective early warning system and rapid detection of HPAI	<ul style="list-style-type: none"> <li>• Conduct value chain analysis and mapping, transmission studies to support national and regional prevention and control measures related to avian influenza introduction (including from wild birds) and lateral transmission along poultry value chains.</li> <li>• Build sustainable national and regional capacity for early warning surveillance and to regularly conduct risk assessments and assess risk management along poultry value chains.</li> <li>• Engage stakeholders in surveillance system design and implementation and develop educational and awareness materials.</li> <li>• Identify the related drivers and risks posed to human health, livelihoods and food security, and biodiversity at the human-animal-wildlife/environment interface at national, regional and global levels.</li> <li>• Identify risk hotspots and develop contingency plans collaboratively and in coordination with all Quadripartite partners at national, regional and global levels.</li> <li>• Prepare and fund multisectoral contingency plans for HPAI outbreaks in wildlife to monitor and mitigate the impact on wild birds and mammal populations.</li> <li>• Review regulatory issues that impede domestic and international transfer of wildlife samples for avian influenza diagnosis and research.</li> </ul>
Ineffective implementation of biosecurity measures	<ul style="list-style-type: none"> <li>• Share best practices on biosecurity, and build a community of practice (CoP), for the enhancement of progressive biosecurity management along poultry value chains and at the national level (via PMP-TAB).</li> <li>• Critically review the best practices of countries at high risk of HPAI outbreaks to guide the development of programmes for HPAI prevention, adopting a broad One Health approach and ensuring drivers for behavioural change and gender effects are considered.</li> </ul>

<p>Stamping out of affected flocks without commensurate compensation</p>	<ul style="list-style-type: none"> <li>• Make policies for stamping out and compensation.</li> <li>• Advocate national governments to establish disease emergency funds that can be used to compensate for flocks depopulated to control HPAI outbreaks.</li> <li>• Link payment of compensation to level of implementation of on-farm biosecurity.</li> </ul>
<p>No effective vaccination against HPAI</p>	<ul style="list-style-type: none"> <li>• Encourage thorough quality control testing of vaccines at national level and by AU-PANVAC, including vaccine matching studies and post-vaccination monitoring.</li> <li>• Encourage the implementation of biosecurity measures on farms in support of vaccination.</li> <li>• Encourage post-vaccination pathogen/genomic surveillance to closely monitor the behaviour of the avian influenza virus in vaccinated flocks.</li> </ul>
<p>Lack of effective community awareness creation on HPAI to enhance early reporting</p>	<ul style="list-style-type: none"> <li>• Engage stakeholders in surveillance system design and implementation and develop educational and awareness materials.</li> <li>• Rapidly intensify efforts to integrate behavioural science and adult learning principles into HPAI prevention and control to better inform, design, test and upscale behaviour change interventions, through farmer field schools or other modalities of community engagement, and by increasing regional applied/adaptive research capacity.</li> <li>• Share best practices on biosecurity, and build a CoP, for the enhancement of progressive biosecurity management along poultry value chains and at the national level (via PMP-TAB).</li> <li>• Engage local communities to participate in risk assessment and risk management to establish realistic, practical and sustainable long-term solutions for biosecurity management.</li> <li>• Establish data/information sharing platforms to integrate information for epidemiological analyses and decision-making using a One Health approach at national, regional and global levels. This includes addressing issues related to impacts of data sharing on scientific publications, data ownership and implications of access and benefit sharing legislation.</li> </ul>

<p>No effective public-private partnership at national levels</p>	<ul style="list-style-type: none"> <li>• Tailor avian influenza surveillance for different country contexts and purposes. Surveillance data from all sectors should be shared rapidly and integrated for decision support and communication with all stakeholders.</li> <li>• Assess the legal and governance frameworks needed to apply different surveillance approaches at national level for disease control and to conform with WOAHA standards when applied to trade and market access, as well as access and benefit sharing arising from the use of genetic resources.</li> <li>• Engage stakeholders in surveillance system design and implementation, and development of educational/awareness materials and other communication methods.</li> <li>• Engage local communities to participate in risk assessment and risk management to establish realistic, practical and sustainable long-term solutions for biosecurity management.</li> <li>• Build partnerships between the veterinary services and the private sector through the application of big data and training programmes, which foster increasing ownership and responsibility of the private sector.</li> <li>• At the regional and subregional levels, work with the private sector and other partners to establish information-sharing platforms, to inform broader policy development for prevention and control.</li> <li>• With regards to One Health, consider HPAI as a critical animal health, public health and wildlife conservation issue and implement avian influenza surveillance, research and response in relation to wild birds accordingly.</li> </ul>
<p>Lack of regional coordination on HPAI control</p>	<ul style="list-style-type: none"> <li>• Establish and strengthen an avian influenza subnetwork at ECOWAS RAHC, with in-country focal points, to better coordinate and share information on HPAI prevention and control.</li> </ul>

## DAY 4 (2 JUNE 2023)

The fourth day commenced with the presentation of the results of the working groups mentioned above. This was followed by informative sessions and discussions on HPAI emergency preparedness in WCA. The result of the Progressive Pathway for Emergency Preparedness (PPEP) assessment in West Africa was presented by Lionel Gbaguidi. The PPEP tool has been developed by FAO EMC. It is a capacity-building process tool that enables countries to self-assess and

standardize their animal health emergency management capacity needs. It serves to guide and harmonize multisectoral animal health emergency management systems and is to be used during the peacetime phase of emergency management. By using the PPEP's self-assessment guide veterinary services can:

- identify and prioritize capacity needs related to emergency management; and
- request for training and in-country support offered by FAO and partners.

The latest PPEP results in West Africa revealed significant variations between countries.

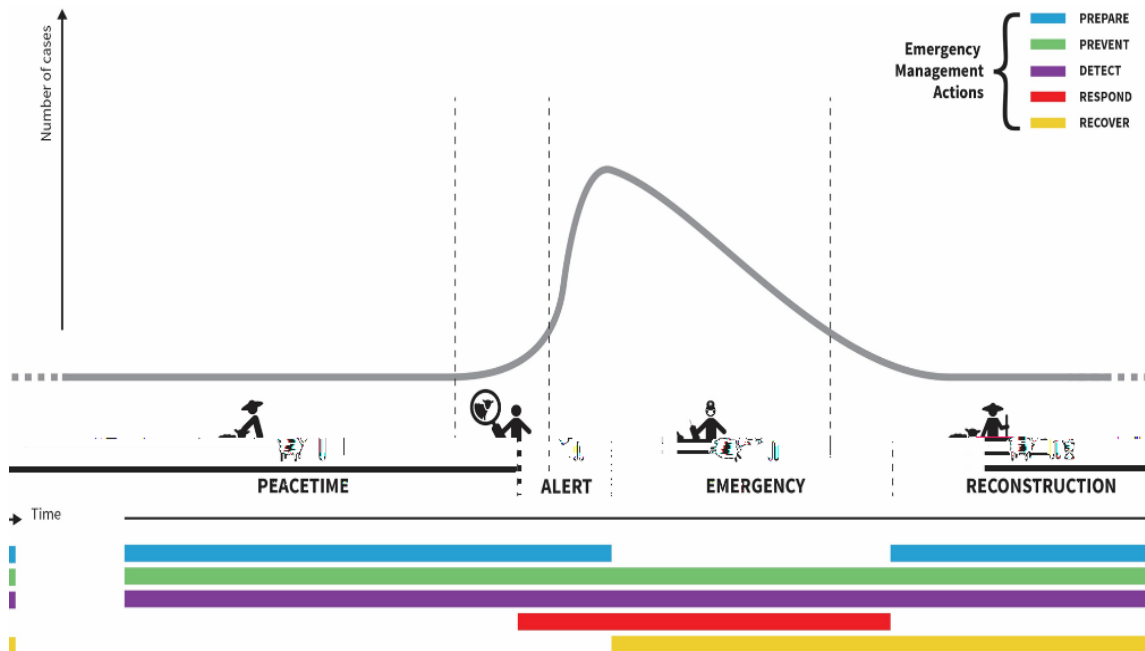
The final session featured presentations on the following topics:

- 1) Incident management strategy and Good Emergency Management Practice (GEMP): case of HPAI, which was presented by Frederic Poudevigne (FAO EMC).
- 2) Incident Coordination Group (ICG) management and functioning, which was presented by Nir Rudoler (FAO EMC).
- 3) Introduction to the EMC strategy for improved coordination of animal health emergencies and road map to establish a functional HPAI ICG in West Africa, which was presented by Nir Tenenbaum (FAO EMC).

These presentations underscored the comprehensive nature of emergency management, encompassing the organization and coordination of responsibilities, resources and actions to address all aspects of an emergency. The comprehensive approach to emergency management has four interdependent components or phases, which are:

- Prevention
- Preparedness
- Response
- Recovery

FAO EMC has adapted this approach by inserting a fifth component as a key element: "Detection". To support countries' preparedness, FAO EMC offers a set of guidelines to manage emergencies called "GEMP", which outlines good emergency management practice – providing a whole methodology to improve a system. GEMP is a set of guidelines to help organize and build the capacity of countries to manage animal health events through five key actions: prepare, prevent, detect, respond and recover, which are distributed appropriately throughout the four phases of an animal health event – peacetime, alert, emergency and reconstruction.



The ICG serves as a platform for countries, regions and partner organizations to come together and share information on or request support to address a specific animal health event, as well as other emergencies, using the One Health approach.

The ICG platform is not intended for disease surveillance but focuses on response to critical needs by aligning and harmonizing the implementation of actions of animal health and food security stakeholders and experts at the national, regional and global levels. The EMC ICG process involves six steps, including ICG activation (Step 0) and ending with deactivation (Step 5). There are four steps in between, which are the designation of an ICG coordinator, moderators and ICG assistants (Step 1), creating an ICG participant list (Step 2), facilitating the ICG (Step 3), including preparing an ICG call, sharing information, needs and action plans, and Step 4, which is to recommend actions. During 2019–2020, six ICGs were activated and have had many positive impacts at various levels.

FAO designed the strategy for improved coordination of animal health emergencies for all organizations involved in managing and supporting animal health emergencies (AHEms) at regional and global levels. It enables the formalization of collaboration and coordination, setting regional rules, knowing and respecting mandates and expertise, and optimizing the use of resources. To ensure the adoption and implementation of the strategy for improved coordination of animal health emergencies, the EMC has designed a gradual collaborative process that will be performed first internally within FAO units and later with other organizations involved in managing AHEms at regional and global levels.

## CLOSING CEREMONY

The recommendations of the workshop (see Table 3) were read by Lisette Kohagne Tongue, representing the secretariat of the meeting. The closing remarks were then delivered, first by Eugene Koffi Kouassi, from ECOWAS RAHC, who congratulated the workshop organizers for the initiative and emphasized the support of ECOWAS in strengthening the prevention and control of HPAI in West Africa. Subsequently, Abebe Wolde, the Acting Regional Manager of FAO ECTAD for WCA, after thanking everyone, underlined the need for collaboration to successfully prevent and control HPAI in the region and highlighted the stakeholders' commitment as outlined in the final communique. The meeting was officially closed by the representative of the CVO of Ghana.

## ACKNOWLEDGEMENTS

The following organizations have been acknowledged for their participation: veterinary officers from ECOWAS Member Nations and selected participants from East and Southern Africa, ECOWAS RAHC, WOA, representatives of private farmers and veterinary associations, AU-PANVAC, USAID Ghana Global Health Security Office, technical experts from various institutions in Asia, Egypt and Europe, who served as resource partners, FAO headquarters and the FAO Regional Office for Africa. The meeting received financial support from the USAID-funded HPAI project in West Africa and was implemented by the FAO ECTAD WCA team.

## RECOMMENDATIONS

**Table 3: Key recommendations from the meeting**

<u>To ECOWAS Member Nations</u>	
1	<b>Policy, coordination, advocacy, communication and resource mobilization</b> <ul style="list-style-type: none"><li>• Promote/develop insurance and compensation policies for the poultry sector.</li><li>• Develop policies for sustainable and emergency surge needs through public-private partnerships.</li><li>• Review and update the legal and governance frameworks for the prevention and control of HPAI.</li><li>• Strengthen partnerships between the veterinary services and the private sector.</li><li>• Ensure gender balance throughout the value chain during training and sensitization.</li></ul>
2	<b>Epidemiology and ecology of avian influenza virus</b> <ul style="list-style-type: none"><li>• Identify risks hotspots/interfaces for wildlife-poultry spillovers and along the poultry value chain for onward transmission.</li></ul>

	<ul style="list-style-type: none"> <li>• Support virus phylodynamics at the environment/wildlife/poultry/human interface, and integrate data from different sectors to understand the evolution and ecology of the virus.</li> </ul>
<b>3</b>	<b>Surveillance and laboratory diagnosis</b>
	<ul style="list-style-type: none"> <li>• Apply novel genomic surveillance approaches in high-risk areas to understand avian influenza virus circulation.</li> <li>• Strengthen cross-border surveillance.</li> <li>• Establish/strengthen biobanking and biorisk management for the proper storage and management of pathogens maintained in the laboratory.</li> <li>• Strengthen good laboratory leadership practice of veterinary officers, including laboratory managers.</li> </ul>
<b>4</b>	<b>HPAI prevention and control</b>
	<ul style="list-style-type: none"> <li>• Ensure that any new vaccine used in Africa is based on circulating strains and quality tested by AU-PANVAC.</li> <li>• Conduct an inventory of avian influenza vaccines being used in the country.</li> <li>• Enforce regulatory measures on the importation and distribution of veterinary drugs and vaccines.</li> <li>• Establish a functional database of the poultry value chain.</li> <li>• Incorporate behavioural sciences and adult learning principles into HPAI prevention and control.</li> <li>• Update country HPAI preparedness and response plans.</li> <li>• Develop national biosecurity action plans to improve risk management along the poultry value chain, using the PMP-TAB framework aligned to international standards.</li> </ul>
<b><u>To ECOWAS RAHC</u></b>	
<b>1</b>	<b>Policy, coordination, advocacy and resource mobilization</b>
	<ul style="list-style-type: none"> <li>• Update the regional HPAI strategy, taking the epidemiology of the disease and its spread in the region into consideration, as well as the current scientific findings and recommendations of this consultative meeting.</li> <li>• Facilitate the implementation of a comprehensive biosecurity framework in Member Nations, using the PMP-TAB framework and other relevant tools.</li> <li>• Facilitate the establishment of a network at regional level of poultry producer associations.</li> <li>• Set up/strengthen a regional animal health emergency management system at the regional animal health network level, with a focus on the HPAI incident coordination mechanism.</li> <li>• Establish a stockpile in West Africa for emergency response.</li> </ul>



	<ul style="list-style-type: none"> <li>• Facilitate the establishment of the Animal Health – Emergency Operation Centre in Member Nations.</li> <li>• Establish a regional human resource database for emergency response in the region.</li> <li>• Promote data sharing for enhanced risk information and an early warning system among ECOWAS countries.</li> <li>• Facilitate the development of an action plan based on the meeting recommendations to streamline their follow-up and implementation.</li> </ul>
<b>2</b>	<b>Surveillance and laboratory diagnosis</b>
	<ul style="list-style-type: none"> <li>• Establish data/information sharing platforms to integrate information for epidemiological analyses and decision-making.</li> <li>• Support avian influenza surveillance of domestic and wild birds in the region.</li> </ul>
<b>3</b>	<b>HPAI prevention and control</b>
	<ul style="list-style-type: none"> <li>• Support the implementation of the inventory of avian influenza vaccines used in the ECOWAS region.</li> <li>• Coordinate and mobilize funding for multiagency and multisector contingency planning responses for HPAI outbreaks in poultry and wild birds.</li> </ul>
<b><u>To development partners (FAO, USAID, etc.)</u></b>	
	<ul style="list-style-type: none"> <li>• Support the establishment of an emergency stockpile in the ECOWAS region.</li> <li>• Support the establishment of a genomic sequencing platform at the regional support laboratories and national laboratories.</li> <li>• Promote novel approaches for avian influenza early warning surveillance and laboratory diagnostics.</li> <li>• Build sustainable national and regional capacity for surveillance and laboratory techniques, including sequencing.</li> <li>• Support flyway and wetland-based avian influenza surveillance in wild birds at regional level.</li> <li>• Provide capacity building trainings on HPAI using VLCs.</li> <li>• Support the provision of efficient equipment maintenance and calibration at all laboratories in the region.</li> <li>• Support the accreditation process in national laboratories in the region.</li> </ul>

## Appendices

Link to the agenda and various presentations delivered during the meeting:  
<https://drive.google.com/drive/folders/1eRWTnciCoqwCt-OYRYxHMPeVEckVqumh?usp=sharing>