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HPAI outbreak responses:

An integrated One Health approach

Yemen

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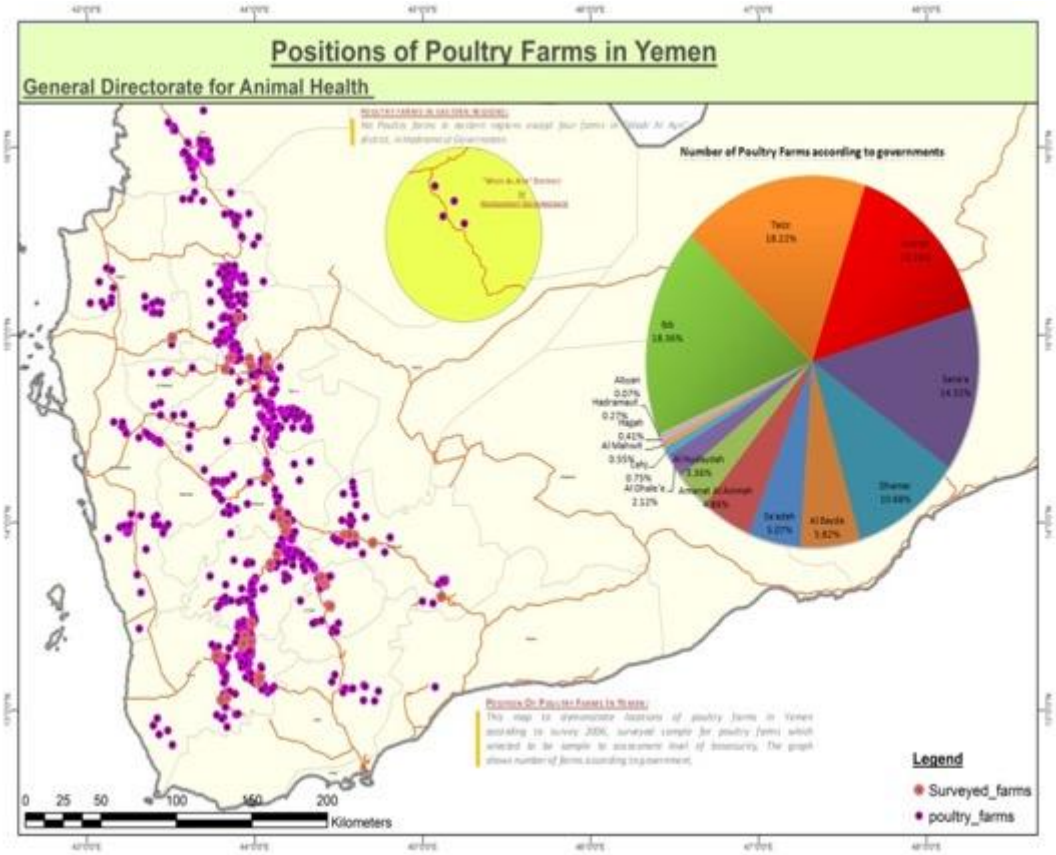
Background of the Poultry Sector in Yemen

- **Predominantly Chickens:** Other poultry like ducks and guinea fowl are kept in very small numbers. Pigeon numbers are declining.
- **Two Main Parts:** Household ('backyard') and commercial ('industrial').
- **Household Poultry (Backyard)**
  - **Population**: ~9 million birds, mainly for home consumption or local sale.
- **Commercial (Industrial)**
  - **Breeder Flocks**: Only parent flocks; broiler parents ~2 million, layer parents ~0.35 million.
  - **Table Egg Layers**: ~7-8 million birds.
  - **Broiler Growers**: Annual output ~205 million birds; average standing population ~30 million birds.
- **Average annual growth rate** (2011-2023): **~5.8%.**



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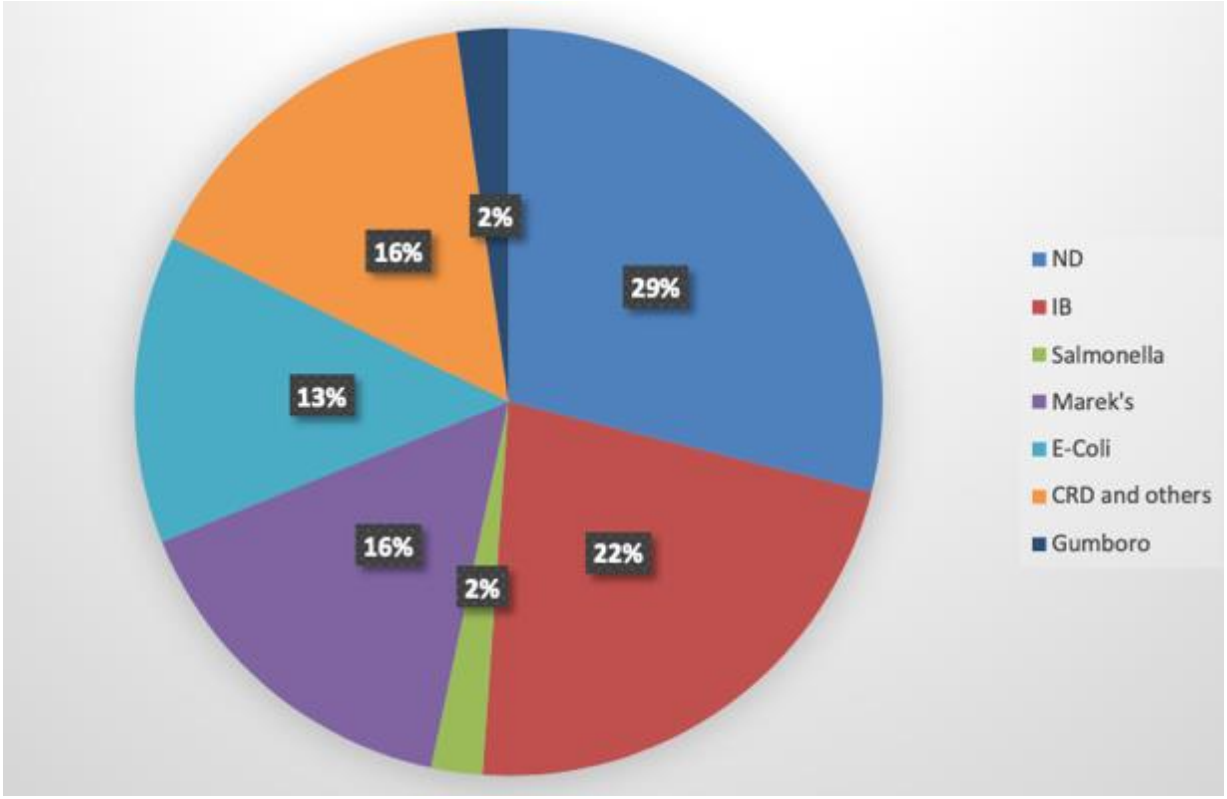
Avian and Human Influenza Preparedness in Yemen

- **Emergency Plan for AI (2006)**: Established to address immediate threats of avian influenza.
- **Integrated Action Plan (2007)**: Focuses on prevention, control, and pandemic preparedness against avian and human influenza.
- **Virus Transfer Risk**: Considered low due to low human and poultry densities in migratory areas.
- **Import Ban**: All live poultry and poultry products banned from countries with confirmed or suspected AI cases.
- **Field Survey**: Conducted on all breeding farms (parent stock); 1781 samples tested for AI using ELISA and HI for H5, H7, and H9.
- **Surveillance Findings**: No AI disease caused by H5 and/or H7 detected in Yemen. Joint team from Agriculture and Health ministries investigated reported cases in humans and animals.

Number of Poultry Diseases Reported in 2023



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Key Measures to Prevent Avian Influenza in Yemen

- **Import Restrictions**: All importations of live poultry and poultry products were banned from those countries where it was proved to have the disease or suspected to have it. And also the wild and pet birds were totally banned.
- **Surveillance**: Implement active and passive surveillance for all susceptible poultry species using molecular, virological, serological, and clinical methods.
- **Biosecurity Measures**: Enhance farm biosecurity by using protective equipment, culling infected birds, and conducting widespread testing.
- **Public Awareness**: Increase awareness among farmers, workers, and the public about biosecurity measures and the importance of reporting bird illnesses.
- **Coordination and Preparedness**: Ensure coordination between ministries and authorities for rapid outbreak response.
- **Inspection and Testing**: Conduct comprehensive inspections and tests on all imported poultry breeding stock and birds.
- **Migratory Bird Control**: Implement strict measures to prevent the hunting and sale of migratory birds in poultry markets.

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National prevention and control for avian diseases (1)

easures	Y/N	Description
Programme to control or eradicate disease	Y	Programme to control implemented.
Veterinary legislation	Y	Law No.(17) of the year 2004, which gives veterinary authority the right control and protect the livestock overall the country.
Emergency preparedness and response plans	Y	Emergency plan 2006, integrated action plan 2008
Disease surveillance	Y	Implementing passive and active surveillance
Disease reporting	Y	All the official and private veterinarians and farmers
Detection and management of cases	Y	The suspected cases inspected by DGAH veterinary team and samples tested at CVL.
Measures to prevent introduction or spread of disease	Y	Disease monitoring, Biosecurity measures and Awareness implemented
Vaccination	N	-
Measures to protect public health	Y	Awareness, training on biosecurity and biosafety and biorisk managemer
Communication and collaboration among all competent authorities	Y	One Health Committee (MOPH, MAIF, MoWE Authority).
Awareness programme for relevant stakeholders	Y	Very limited (due the current situation in the country)

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Laboratory capacity

- A brief description of laboratory capacity for avian diseases
  - AI rapid test.
  - Elisa Test.
  - HI for H5, H7 and H9 testing.
  - PCR and RT- PCR only in CVL- Sana'a (not working due to lack of some reagents and calibration)

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Challenges and solutions in implementing national plan

Challenges	Solutions
Weak Coordination: Lack of clear command lines and responsibilities among government ministries and sectors.	**Enhanced Coordination**: Include ministries of Planning, Defense, and Local Management in the High National Committee. Establish a coordinating technical committee from both ministries and related bodies
Insufficient Analytical Capacity: Lack of training in epidemiology, risk assessment, and disease costing for the central unit and field staff.	**Training Programs**: Implement training programs in epidemiology, risk assessment, and information management for both central and field staff.
Lack of Financial Recourses	**Allocate sufficient budgets** to cover all operating costs related to field surveillance activities.
Field Facilities: Inadequate field facilities for disease investigation	**Field Facilities**: Provide necessary field facilities, including cars, equipment, cold chain equipment, GPS tools, and protective clothing.
Farmer Awareness: Lack of extension work to raise farmer awareness on bio-security.	**Extension Work**: Enhance professional extension work targeted at farmers, focusing on bio-security issues.
Laboratory Strengthening: Need to strengthen the Central Veterinary Laboratory (CVL) with modern diagnostic tests.	**Laboratory Strengthening**: Introduce modern diagnostic tests and training at the CVL for rapid and accurate diagnoses.
Non-Functional Regional Laboratories:	**Regional laboratories** require rehabilitation and the provision of

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Thank you

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