

Methodology

Information and data collection for this report was coordinated by the office of the UN System Influenza Coordinator and the World Bank through the following sources:

- UN System and partner agencies for quantitative and qualitative updates on Highly Pathogenic Avian Influenza (HPAI) H5N1, and Pandemic (H1N1) 2009 situation assessments, achievements and remaining challenges. UN agencies also contributed assessments on global pandemic preparedness, and the latest scientific evidence on endemic disease, public health threats, and drivers for emerging disease threats at the animal-human-environment interface;
- Interviews with key informants;
- A Donor Polling exercise led by the World Bank, addressing financial commitments and disbursements from donors, as well as analysis and costing of recommendations, and investment priorities for forward planning;
- Collection and collation of case studies illustrating key aspects of animal and pandemic influenza preparedness and approaches from countries in all regions of the world;
- Other published studies and assessments from a range of stakeholders including academic sources, non-government agencies, and the private sector.

Information has been acquired primarily from secondary sources for an analytical and qualitative assessment of current animal and pandemic influenza issues.

Cross cutting issues focusing on achievement of the Millennium Development Goals (MDGs), gender equality for sustainable development, and enhancing resilience have been addressed in this report.

As with previous reports, information has been aggregated by World Bank Regional classifications of developing and transition countries: Sub-Saharan Africa, East Asia and the Pacific; Europe and Central Asia; Latin America and the Caribbean; Middle East and North Africa; and South Asia.

Every effort has been made to ensure the accuracy of information and conclusions documented in these Resource Papers with United Nations and other contributing agencies. Technical advisory assistance was provided by independent expert advisers for specific sections of the report. The Resource Papers have also been peer reviewed by the 'Hanoi Preparatory Group', comprising key representatives from the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the World Animal Health Organization (OIE), the World Bank (WB) and the United Nations Children's Fund (UNICEF).

UNSIC and the World Bank are jointly responsible for the preparation, content and production of the report, and for any future revisions.

Acronyms and Abbreviations

AECID	Spanish Agency for International Development Cooperation
AGA	Animal Production and Health Division (FAO)
AHI	Avian and Human Influenza
AHIF	Avian and Human Influenza Facility (multidonor trust fund)
AI	Avian Influenza
AIDS	Acquired Immune Deficiency Syndrome
APEIR	Asian Partnership for Emerging Infectious Disease Research (China and South East Asia)
APHIS	Animal and Plant Health Inspection Service (US)
ARI	Acute Respiratory Infection
ASEAN	Association of South East Asian Nations
BANF	Business Advisory Network for Flu (UK)
BCP	Business Continuity Plan
BSE	Bovine Spongiform Encephalopathy
CAHW	Community Animal Health Workers
CAPSCA	Cooperative Arrangements for the Prevention of Spread of Communicable Disease through Air Travel
CDC	US Centers for Disease Control and Prevention
CFEZID	Centre for Food-borne, Environmental and Zoonotic Infectious Diseases (Canada)
CFR	Case Fatality Ratio
CIRAD	French Agricultural Research Centre for International Development
DAH	Department of Animal Health (Viet Nam)
DG-SANCO	Directorate General for Health and Consumer Affairs of the European Commission
DLP	Department of Livestock Production (Viet Nam)
DMMU	Disaster Management and Mitigation Unit
DOC	Denomination of Controlled Origin
DPR Korea	People's Democratic Republic of Korea
DZC	Danish Zoonosis Centre
ECDC	European Centre for Disease Prevention and Control
ECSA-HC	East African Community, and East, Central and Southern Africa-Health Community
ECTAD	Emergency Centre for Transboundary Animal Diseases
EID	Emerging Infectious Disease
EIN	Emerging Infectious Diseases Network
EC	European Commission
EU	European Union
EMPRES	Emergency Prevention System (FAO)
FAO	Food and Agriculture Organization of the United Nations
FETPV	Field Epidemiology Training Program for Veterinarian (Thailand)
FPGC	Fund for Protection against Catastrophic Expenditures (WHO Mexico)
FVI	France Veterinaire International
GAVI	Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
GEIS	Global Emerging Infections Surveillance and Response System (US Army and Naval locations/laboratories in Thailand, Kenya, Egypt, Indonesia and Peru).
GETS	Gathering Evidence for a Transitional Strategy (Viet Nam)
GLEWS	Global Early Warning System for Major Animal Diseases (WHO)
GIS	Geographic Information Systems
GISN	Global Influenza Surveillance Network (WHO)
GNI	Gross National Income

GOARN	Global Outbreak Alert and Response Network (WHO)
GPHIN	Global Public Health Intelligence network (Canada)
H1N1	Pandemic Influenza A
H5N1	Avian Influenza A
H2P	Humanitarian Pandemic Preparedness
HIV	Human Immunodeficiency Virus
HPAI	Highly Pathogenic Avian Influenza
HPOC	Humanitarian Pandemic Operations Consultation
ICAO	International Civil Aviation Organization
ICU	Intensive Care Unit
IDP	Internally Displaced Person
IDRC	International Development Research Center (Canada)
IDRL	International Disaster Response Laws
IEC	Information, Education and Communication
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR	International Health Regulations
ILI	Influenza-like Illness
ILO	International Labor Organization
IMCAPI	International Ministerial Conference on Animal and Pandemic Influenza
IOM	International Organization for Migration
ISDR	International Strategy for Disaster Reduction
IS-AI	Integrated Surveillance for Avian Influenza
IZSVe	Istituto Zooprofilattico Sperimentale delle Venezie
KAP	Knowledge, Attitudes and Practices
LDCs	Least Developed Countries
LSHTM	London School of Health and Tropical Medicine
M & E	Monitoring and Evaluation
MAHN/	
REMESA	Mediterranean Euro-Maghreb Animal Health Network
MARD	Ministry of Agriculture and Rural Development (Viet Nam)
MBDS	Mekong Basin Disease Surveillance
MDG	Millennium Development Goals
MOH	Ministry of Health
MOPH	Ministry of Public Health (Thailand)
MRSA	Methicillin-resistant <i>Staphylococcus Aureus</i>
NAHICO	National Avian and Human Influenza Coordination Office (Lao PDR)
ND	Newcastle Disease
NDMA	National Disaster Management Authority
NFP	National (IHR) Focal Point
NGO	Non-governmental Organization
NPS	National Prevention Services
OAP	Operational Action Plan
OECD	Organisation for Economic Co-operation and Development
OFFLU	OIE-FAO Network of Expertise on Animal Influenza
OIE	World Organization for Animal Health
OWOH	One World One Health
PAGnet	Pima Association of Governments Network
PAHO	Pan American Health Organization
PDR	People's Democratic Republic (Lao)
PDSR	Participatory Disease Surveillance and Response (Indonesia)
PHAC	Public Health Agency of Canada

PHEIC	Public Health Emergency of International Concern
PIC	Pandemic Influenza Coordination
PLCCA	Pandemic Corridor Logistics Capacity Assessment
PPP	Private Public Partnership (USAID)
ProMED	Program for Monitoring Emerging Diseases
PVS	Performance of Veterinary Services (OIE)
RADISCON	Regional Animal Disease Surveillance and Control for North America, the Middle East and the Arab Peninsula
RAHC	Regional Animal Health Centre (Mali)
RESOLAB	West and Central African Veterinary Laboratory Network for Avian Influenza and other Transboundary Diseases
SADC	Southern African Development Community
SAR	Special Administrative Region (Hong Kong, China)
SARS	Severe Acute Respiratory Syndrome
SAVRI	Severe Acute Viral Respiratory Infections
SMS	Short Message Service
SOFA	State of Food and Agriculture
SOP	Standard Operative Procedures
SSAFE	Safe Supply of Affordable Food Everywhere, Inc.
TAD	Transboundary Animal Disease
TERN	Tourism Emergency Response Network
TB	Tuberculosis
TRIPs	Trade Related Aspects of Intellectual Property Rights
TTX	Table Top Exercises
UK HPA	United Kingdom Health Protection Agency
ULOs	Upazilla Livestock Officers
UNCAPAHI	United Nations System and Partners Consolidated Action Plan for Animal and Human Influenza
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNHRD	United Nations Humanitarian Response Depot Network
UNICEF	United Nations Children's Fund
UNIP	Urgent Needs Identification and Prioritization
UNOCHA	United Nations Office for the Coordination of Human Affairs
UNSIC	United Nations System for Influenza Coordination
UNWTO	United Nations World Tourism Organization
USA	United States of America
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VLU	Veterinary Livestock Units
VS	Veterinary Services
WAHID	World Animal Health Information Database
WAHIS	World Animal Health Information System
WB	World Bank
WFP	World Food Program
WHO	World Health Organization

Glossary

Emerging Infectious Disease (EID): EID are generally defined as infections that have newly appeared in the population or have existed but are rapidly increasing in incidence or geographical range (WHO). Increase in transmissibility of a microorganism, a shift in virulence or development of characteristics such as microbial resistance, or a species shift are all considered as emerging diseases (FAO).

Endemic: The constant presence of a disease or infectious agent within a given geographic area; it may also refer to the usual prevalence of a given disease within such area.

Enzootic: A disease (can either be high or low morbidity) that is endemic in an animal community.

Epidemic: The occurrence in a community or region of cases of an illness (or outbreak) with a frequency clearly in excess of normal expectancy.

Epidemiology: The brand of science that deals with the incidence, distribution, and control of disease in a population; the sum of the factors controlling the presence or abundance of a disease or pathogen.

Epizootic: The occurrence in an animal population of cases of an illness (or outbreak) with a frequency clearly in excess of normal expectancy.

Global Outbreak Alert Response Network (GOARN): A technical collaboration of existing institutions and networks that pool human and technical resources for the rapid identification, confirmation and response to outbreaks of international importance. The Network provides an operational framework to link this expertise and skill to keep the international community constantly alert to the threat of outbreaks and ready to respond.

Interdisciplinary approaches: A field of study that crosses traditional boundaries between academic disciplines or schools of thought, as new needs and professions have emerged; involves connections and integration of several academic schools of thought, professions or technologies in the pursuit of a common task.

Mekong Basin Disease Surveillance Group: The Mekong Basin is home to six countries: Cambodia, China, Laos, Myanmar, Vietnam, and Thailand. In 1999, delegates from these countries agreed to start disease surveillance collaborations under the name Mekong Basin Disease Surveillance (MBDS).

Multidisciplinary approaches: Approaches which draw from multiple disciplines to redefine problems outside of normal boundaries and reach solutions based on a new understanding of complex situations; multidisciplinary approaches draw on systems-thinking for complex problem solving.

Multisectoral: responses by different functional or sectoral ministries or agencies.

'One Health': The expression 'One health' is used to refer to a more integrated or holistic approach to human, animal and ecosystem health. It represents the collaborative efforts of multiple disciplines to understand the inextricable links among human and animal health and the health of the ecosystems they inhabit. The diseases of primary importance are those that have potential to jump species – between wild or domestic animals and humans.

Pandemic: Disease outbreak occurring over a wide geographic area and affecting an exceptionally high proportion of the population.

Pathogen: A specific causative agent (such as bacterium or virus) of disease.

Pathogenicity: Reflects the ongoing evolution between a parasite and host, and disease is the product of a microbial adaptive strategy for survival.

Prevalence rate: The total number of persons sick or portraying a certain condition in a stated population at a particular time or during a stated period of time, regardless of when that illness or condition began, divided by the population at risk of having the disease or condition at the point in time midway through the period in which they occurred.

Sector 1: Industrial integrated system with high level bio-security and birds/products marketed commercially (e.g. farms that are part of an integrated broiler production enterprise with clearly defined and implemented standard operating procedures for bio-security). (FAO Categorization of Farmers into Four Sectors)

Sector 2: Commercial poultry production system with moderate to high bio-security and birds/products usually marketed commercially (e.g. farms with birds kept indoors continuously; strictly preventing contact with other poultry or wildlife). (FAO Categorization of Farmers into Four Sectors)

Sector 3: Semi-commercial poultry production system with low to minimal bio-security and birds/products usually entering live bird markets (e.g. a caged layer farm with birds in open sheds; a farm with poultry spending time outside the shed; a farm producing chickens and waterfowl). (FAO Categorization of Farmers into Four Sectors)

Sector 4: Village or backyard production with minimal bio-security and birds/products consumed locally. (FAO Categorization of Farmers into Four Sectors)

Surveillance: The continuing scrutiny of all aspects of occurrence and spread of a disease that is pertinent to effective control.

Transdisciplinary approaches: Cooperative approaches that transgress boundaries between scientific disciplines and between science and other societal fields; transdisciplinary approaches include deliberation about facts, practices and values and represent a unity of knowledge beyond disciplines towards more holistic approaches.

Vaccine: A biological preparation that improves immunity to a particular disease. A vaccine typically contains an agent that resembles a disease-causing microorganism, and is often made from weakened or killed forms of the microbe. The agent stimulates the body's immune system to recognize the agent as foreign, destroy it, and "remember" it, so that the immune system can more easily recognize and destroy any of these microorganisms that it later encounters.

Virulence: The degree of pathogenicity of an organism as evidenced by the severity of resulting disease and the organism's ability to invade the host tissues.

Virulence factors: The properties (i.e. gene products) that enable a microorganism to establish itself on or within a host of a particular species and enhance its potential to cause disease.

Virus: A small infectious agent that can only replicate inside the cells of another organism. Viruses are too small to be seen directly with a light microscope. Viruses infect all types of organisms, from animals and plants to bacteria and archaea.

Zoonosis or zoonotic disease: Infection of animal origin that causes disease in human populations; may be enzootic or epizootic.

Zoonotic pool: The population of animals infected with nonhuman microbes that present a potential threat of transmission to humans.