

## **I. Introduction to AI**

What is Avian Influenza and what's the big deal?

## **II. U.S. Government Response**

What are we doing?

## **III. Global Implications**

Why should the rest of the world care and what can we do?





## What is Avian Influenza?

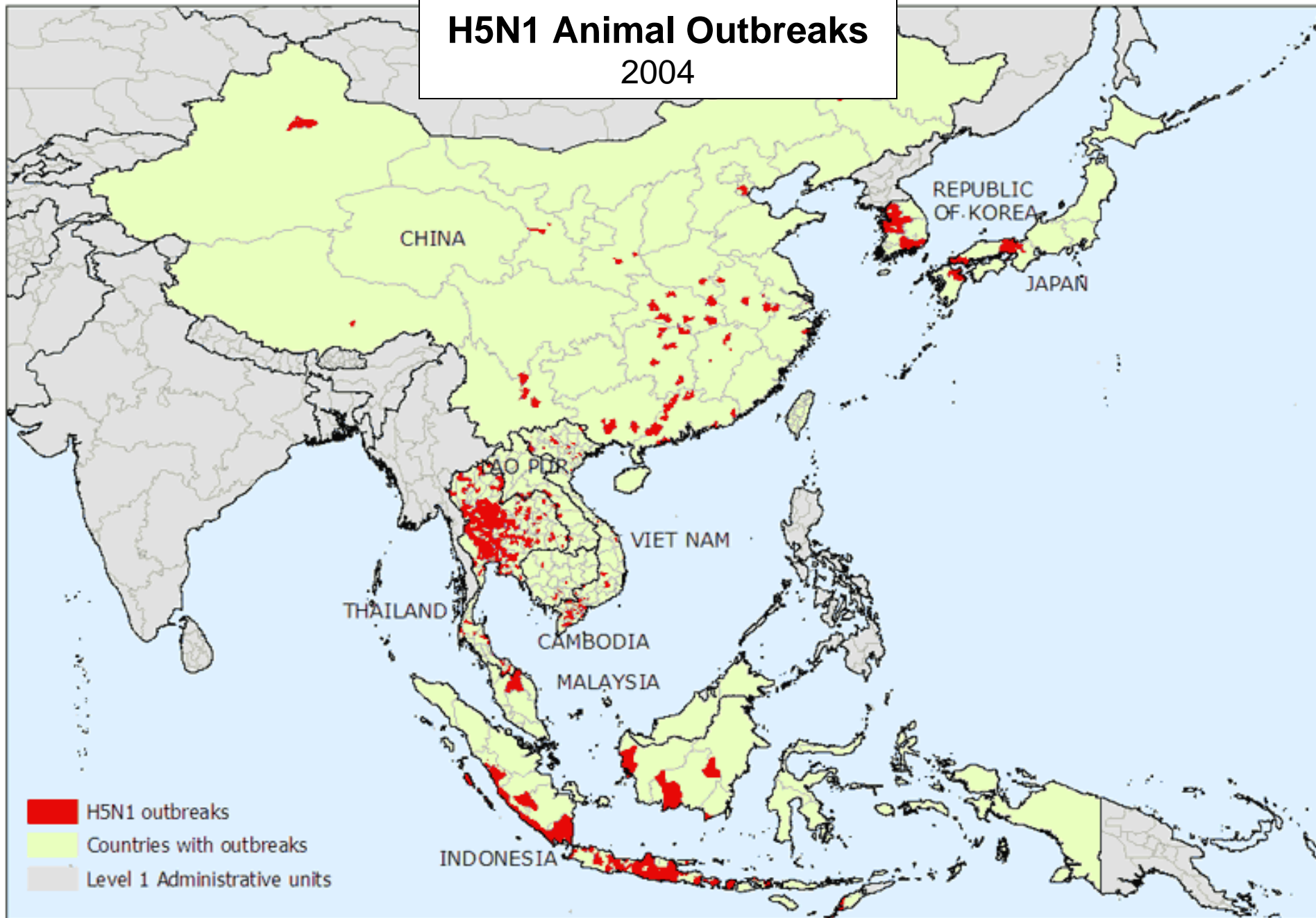
- **Virus that mainly affects domestic & wild birds**
- **AI virus related to influenza viruses that affect humans and other mammals**
- **AI viruses can mutate rapidly and exchange genetic material with other flu viruses (human & pig)**
- **H5N1 AI virus very lethal to animals and humans**
  - 11 countries affected by H5N1 since December 2003
  - estimated 140 million birds killed
  - 112 lab-confirmed human cases with 57 deaths



## How is “AI” spread?

- **Animal & human populations in close proximity**
  - farm animals and pets in/under/next to houses
  - live animal markets (many species from many countries)
- **Poor agricultural practices**
  - inadequate infection control on farms
  - poultry excrement used in agriculture (e.g. fed to pigs)
- **Poor food hygiene**
  - food preparation practices
  - consumption of raw/undercooked meat
- **Frequent travel/trade involving humans and birds**
  - movement of people/animals among farms
  - legal and illegal animal trade
  - wild bird migration

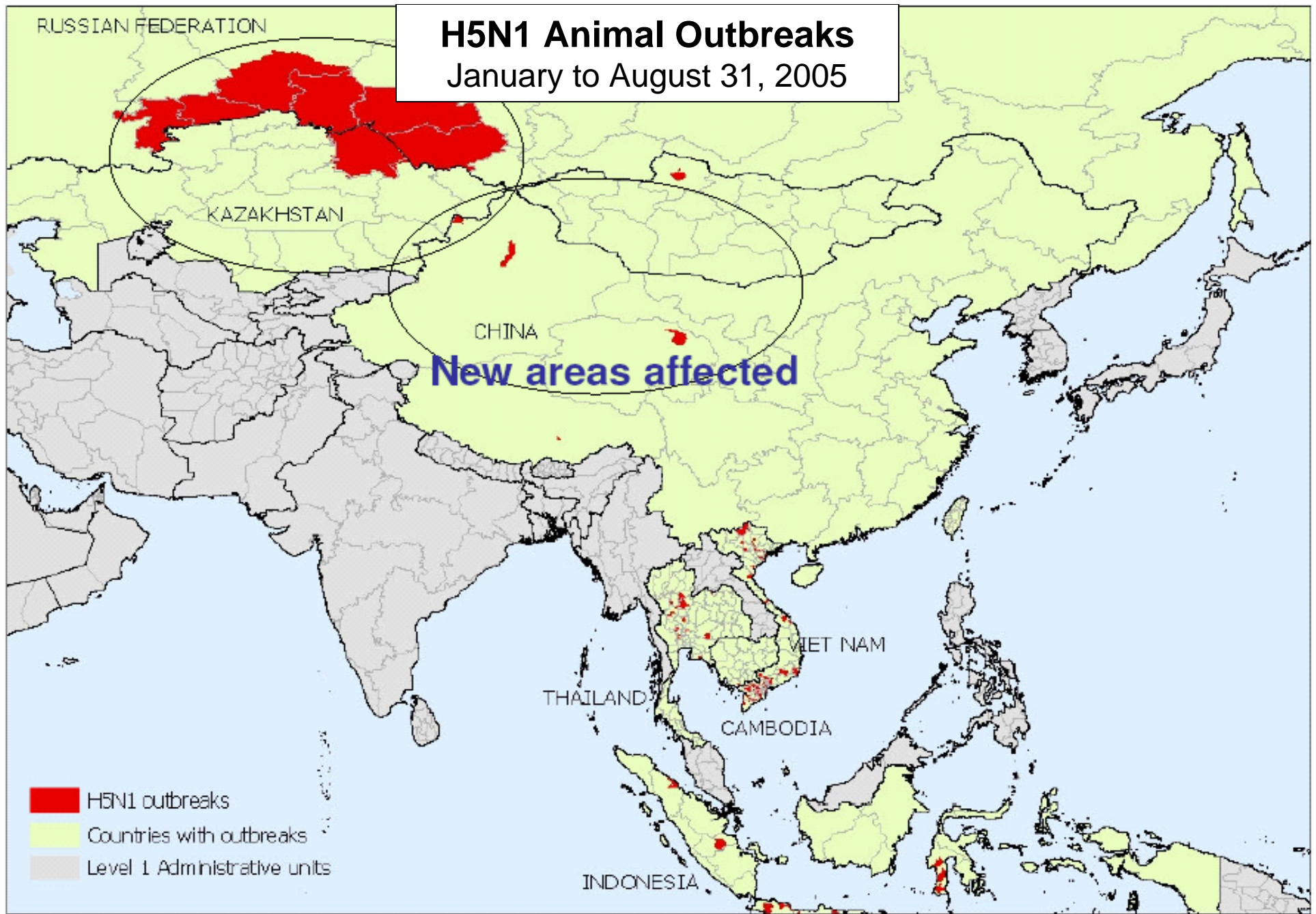
# H5N1 Animal Outbreaks 2004



This map represents the districts or provinces that experienced outbreaks of H5N1 type of Avian Influenza between January and December 2004. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

Data source: OIE, FAO and Government sources





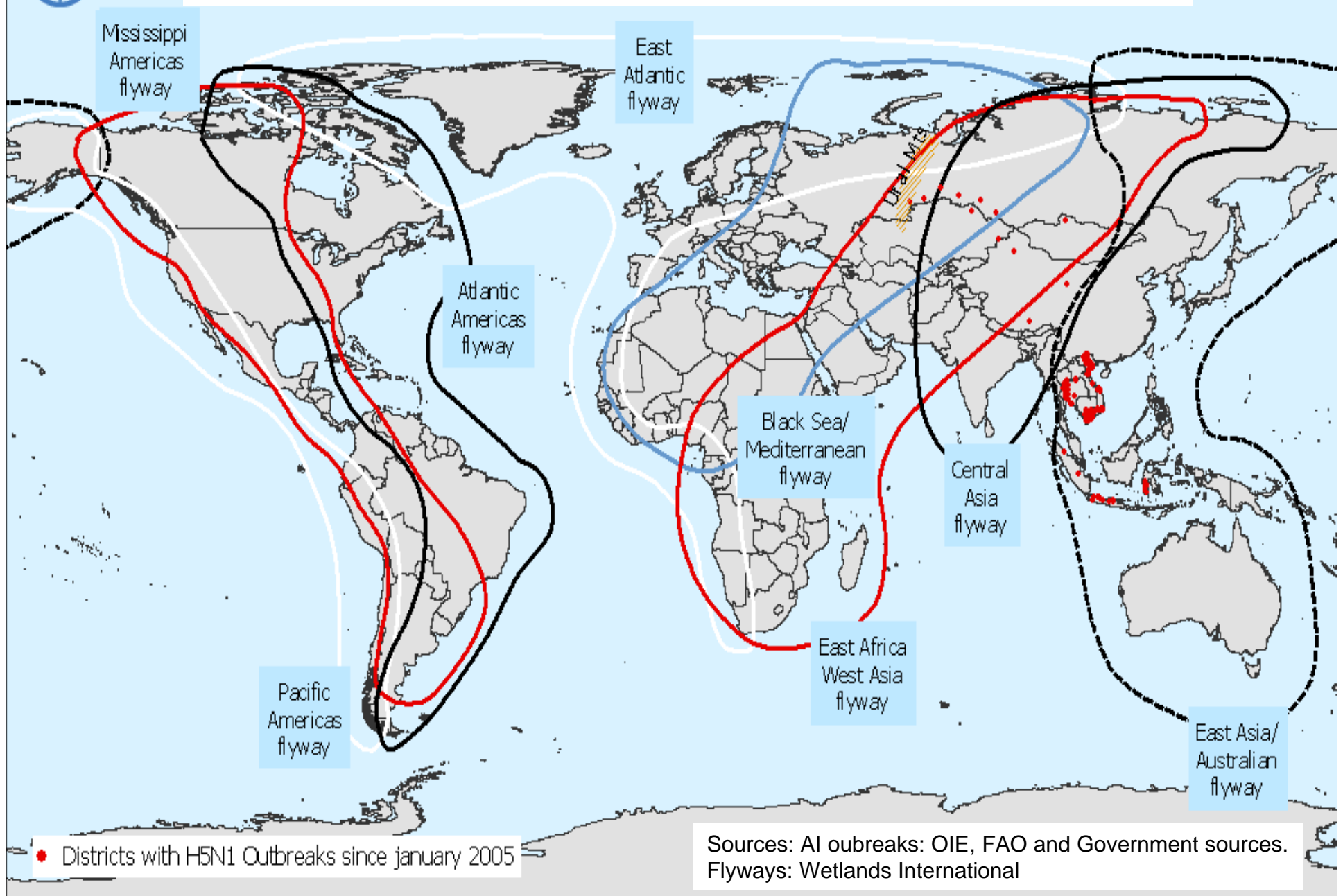
This map represents the districts or provinces that experienced outbreaks of H5N1 type of Avian Influenza between January and August 2005. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

Data source: OIE, FAO and Government sources



# H5N1 outbreaks in 2005 and major flyways of migratory birds

Situation on August 30, 2005





## How could AI cause a pandemic?

### Requirements for pandemic flu:

1. Novel virus

H5N1:

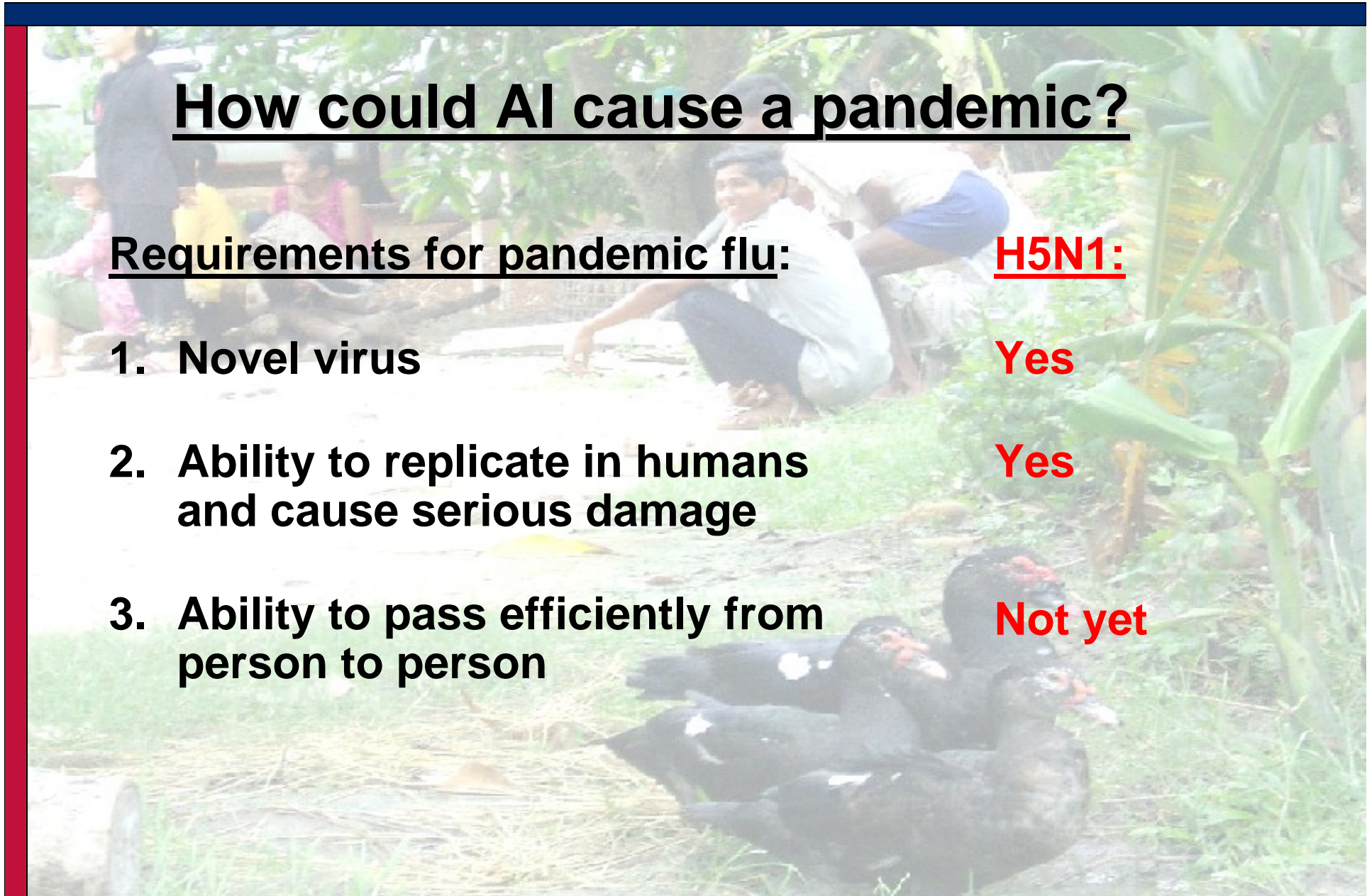
Yes

2. Ability to replicate in humans  
and cause serious damage

Yes

3. Ability to pass efficiently from  
person to person

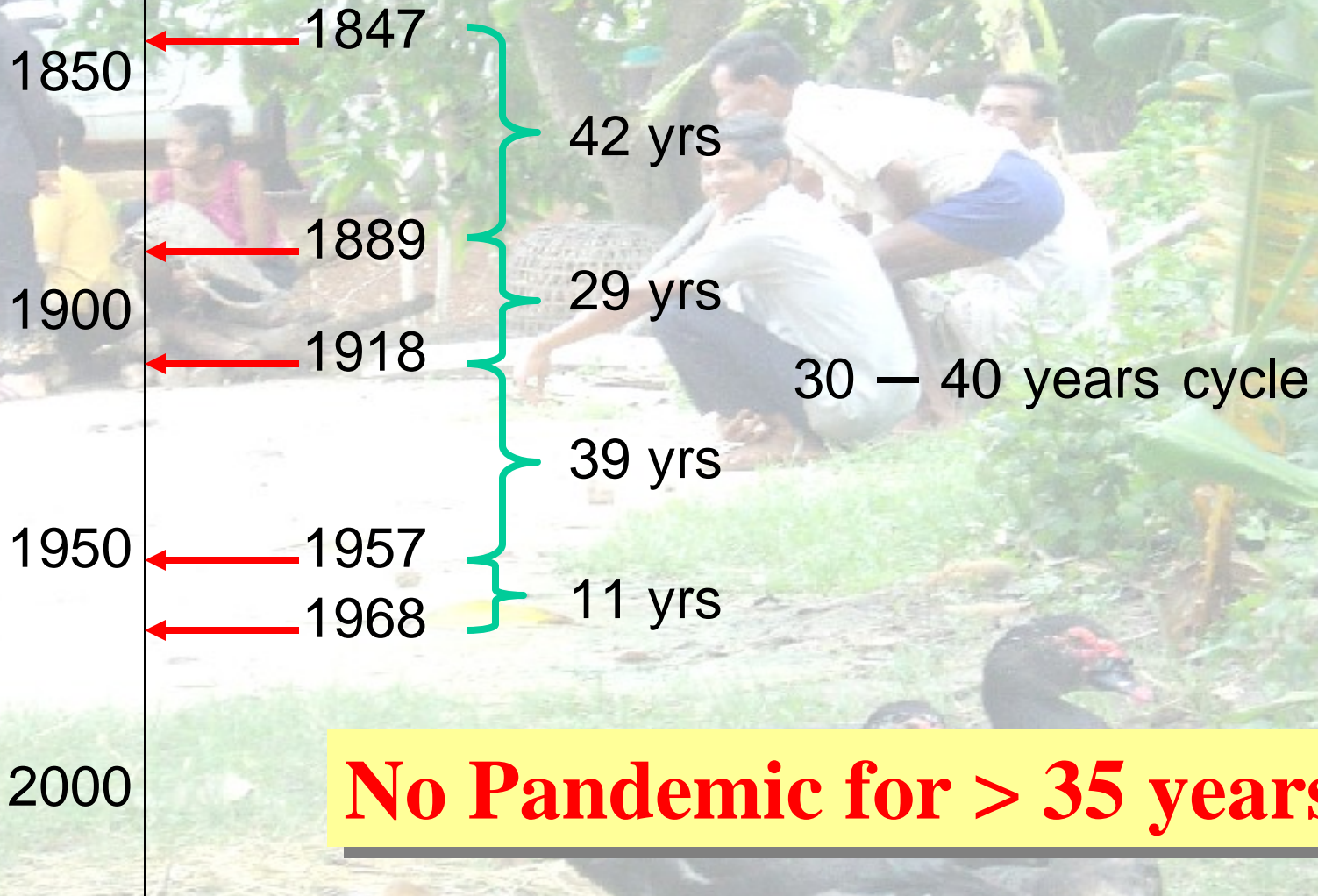
Not yet





**USAID**  
FROM THE AMERICAN PEOPLE

# Past Influenza Pandemics







**USAID**  
FROM THE AMERICAN PEOPLE

# The pandemic of 1918-19

- **3 epidemic waves in close succession**
- **March 1918, Sept 1918, Feb 1919**
- **Estimated 50 - 100 million deaths world-wide**
- **In the U.S.:**
  - **10 million hospitalizations**
  - **2 million deaths**



## Is this a development issue?

- **Current H5N1 impact in SE Asia and Eurasia:**
  - affects rural development, agriculture, wildlife
  - decreases GDP by affecting trade, tourism, etc.
  - diverts staff and finances away from other priorities
  - estimated \$10 billion lost so far because of H5N1
- **Possible pandemic impact (~ 25% of population ill)**
  - health care system overwhelmed and basic services interrupted
  - production, transportation, consumption severely affected
  - decreased capacity for governance and law enforcement
  - forecast of about 10-180 million deaths worldwide





**USAID**  
FROM THE AMERICAN PEOPLE

## The USG's International Response



**What is the U.S. Government doing?**

## Strategic Approach

- **Comprehensive approach involving animal and human health**
- **Build on existing platforms and investments**
- **Coordinate and leverage with other bilateral donors, multilaterals (WHO, FAO) and private sector**
- **Focus on activities that could contribute immediately to the containment of H5N1**



## Key Constraints to containment in Asia

- Poultry farming is largely a “backyard” enterprise
- High “kill-offs” of poultry is common
- Poor public awareness
- Culling is a major disincentive to reporting
- Wild birds and domesticated ducks are major H5N1 reservoirs and are spreading the virus into new areas
- Inadequate preparedness plans
- Lack of timely or reliable information



## Goals of AI Control

- **Limit animal infections**
  - Improve husbandry and marketing practices, increase awareness
  - Minimize contact between wild and domestic birds
  - Culling sick/exposed animals
  - Animal vaccination
- **Limit human infections**
  - Rapid response to reported infections
  - Isolating human cases
  - Use of protective gear
  - Public awareness campaigns
- **Prepare for possible outbreaks**
  - Enhanced planning, cross-ministerial and donor coordination
  - Stockpiling medicines, protective gear, animal vaccines, etc.





**USAID**  
FROM THE AMERICAN PEOPLE

# Theoretical Spread of H5N1





## Key Activities

### **Surveillance and Diagnosis**

- Strengthen surveillance and laboratory diagnostic capacity
- “Early-warning” networks
- Incentives to encourage public cooperation

### **Response**

- Rapid response teams for animal and human outbreaks
- Containment measures including culling & disposal, animal vaccination
- Leverage private sector resources

### **Preparedness**

- Support pandemic planning

### **Research**

- Human vaccines, clinical interventions and diagnostics
- Disease transmission routes

### **Stockpiling**

- Establish international “stockpiles” for containment

### **Communications**

- Targeting high risk populations, general public, to promote low-risk behavior
- Public diplomacy, outreach to policymakers
- Press/media training and media management to minimize inaccuracies



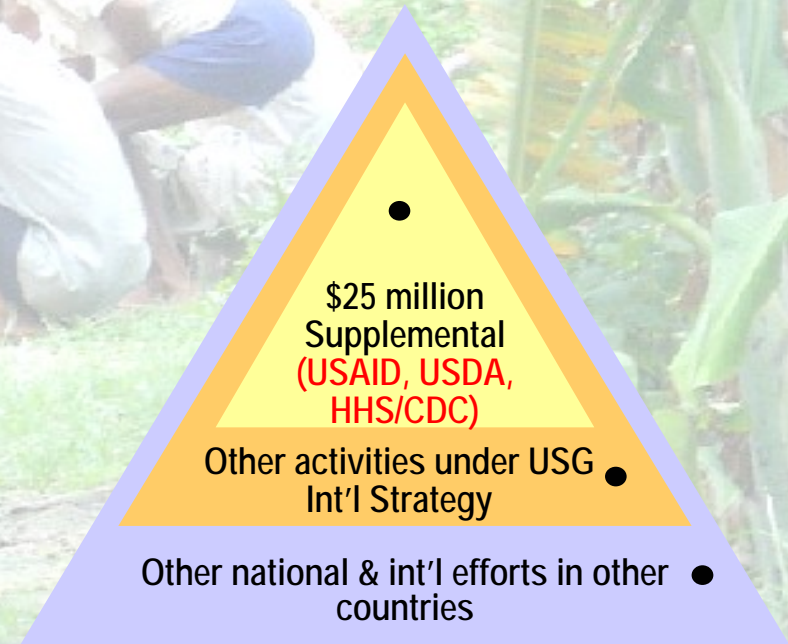


## A coordinated USG approach

- **DoD**
  - Lab capacity, commodities, and training for U.S. military
- **HHS, CDC**
  - Surveillance and diagnostics, pandemic planning, research, communications
- **USDA**
  - TA for animal surveillance and diagnostics, containment & prevention measures, planning
- **State**
  - Public diplomacy, diplomatic engagement, delivery of donated supplies, coordination (drafting joint USG international strategy)
- **USAID**
  - Surveillance and response, private sector involvement, pandemic planning, communications, coordination

## Funding to date

- **USAID: \$13.7 million**
  - Focus on immediate priorities in high-risk countries
  - \$3.7 million FY05 reprogrammed funds
  - \$10 million emergency supplemental
- **USG: Future funding**
  - Discussions ongoing to identify funding
  - Expanded focus to include endemic and high-risk countries, and “the rest of the world”







**USAID**  
FROM THE AMERICAN PEOPLE

## USAID Comparative Advantage

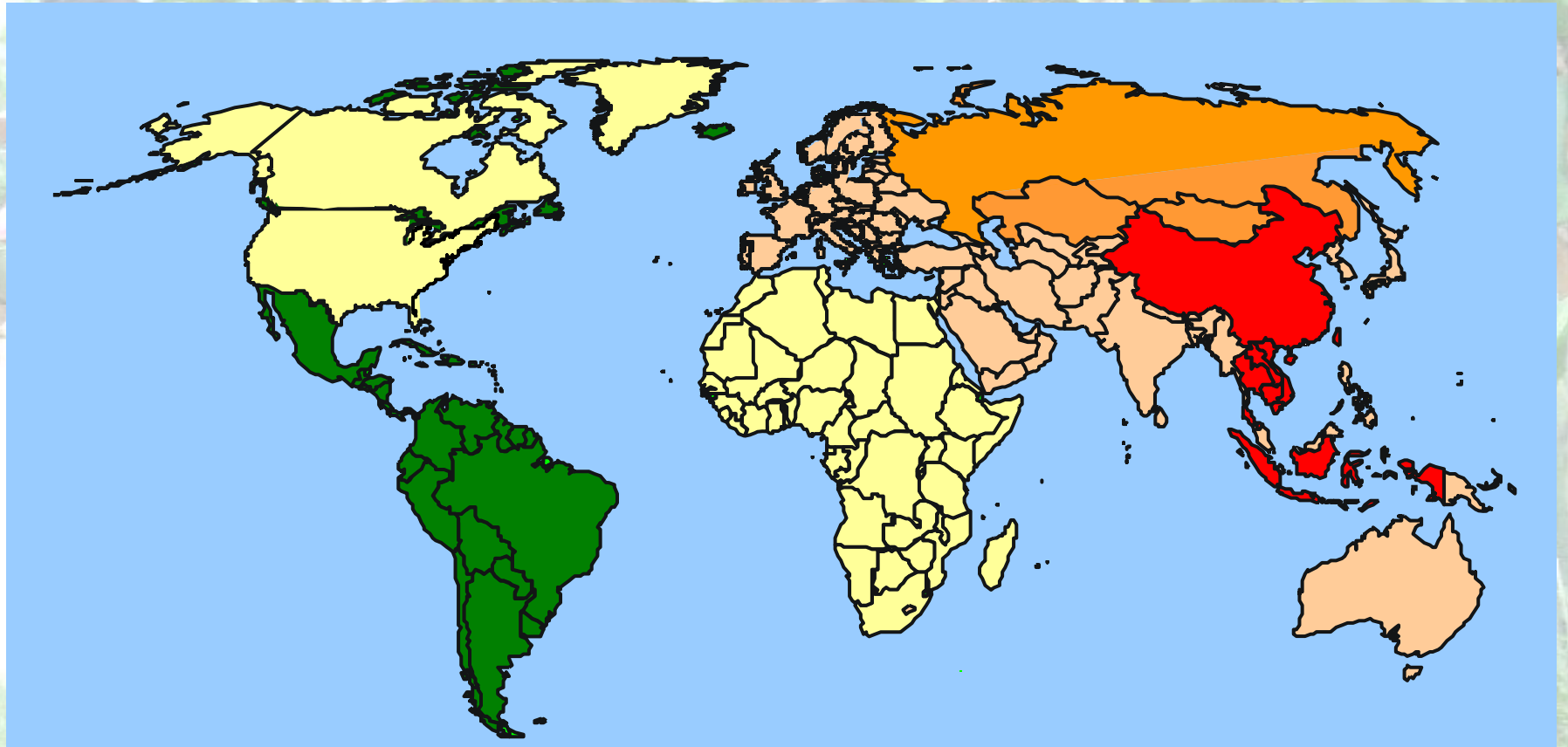
- **Communication/behavior change**
- **Accessing NGO and private sector**
- **Coordination with multilateral organizations**
- **Country and regional missions**
- **OFDA**
  - **Emergency planning**
  - **Pre-positioning commodities**
  - **Participation in USG response teams**



**USAID**  
FROM THE AMERICAN PEOPLE

# U.S. Government Response

## Global Risks of Avian Influenza Outbreaks

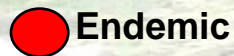


Category 1

Category 2

Category 3

Category 4



**Endemic**

Widespread and recurring H5N1 infections in animals since Dec. 2003



**Epidemic**

Isolated H5N1 outbreaks in animals since July, 2005



**High Risk**

Proximal to endemic or epidemic countries, or at risk of animal outbreaks due to bird migration patterns



**At-Risk**

At risk of animal outbreaks due to bird migration patterns (Africa)



**Pandemic risk**

At lower risk of animal outbreaks, but would be affected by a human influenza pandemic



## What can we do with no money?

- Provide active multi-sector leadership, engage/identify in-country partners to raise the profile AI
- Encourage ministries – especially MoH – to designate points of contact for pandemic preparedness
- Identify potential partners (e.g., private sector orgs. that may be impacted) that can provide resources, TA, expertise, financial support for planning and response
- Assess country/regional needs
- Work to strengthen/use existing resources
- Start to organize the donor community



## What can we do with a little money?

- Assist countries to develop national pandemic preparedness plans
- Do desktop or actual pandemic simulations to test national plan
- Fund targeted technical assistance
- Start/enhance surveillance efforts
- Engage Collaborating Agencies (health CAs) in preparedness/response efforts



## Resources

- **USAID AI/Pandemic Influenza Response Unit**
  - Planning, coordination, TA, information-sharing, representation from DCHA/OFDA, GH, GDA, Regional bureaus and ANE missions
- **AI E-room for file-sharing among USG**
- **USG interagency communications & planning groups**
- **USG email lists for sharing news/developments**
- **Websites (USAID, CDC, WHO, FAO)**
  - [http://www.usaid.gov/our\\_work/global\\_health/home/News/news\\_items/avian\\_influenza.html](http://www.usaid.gov/our_work/global_health/home/News/news_items/avian_influenza.html)
  - <http://www.cdc.gov/flu/avian/index.htm>
  - [http://www.who.int/csr/disease/avian\\_influenza/en/index.html](http://www.who.int/csr/disease/avian_influenza/en/index.html)
  - <http://www.wpro.who.int/avian%5Fflu/>
  - [http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special\\_avian.html](http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html)

## Key Take-Home Messages

- **Favorable conditions exist which allow AI to emerge, evolve, spread**
- **Despite current low mortality of AI, it has already had real economic impact**
- **Country action needed:**
  - **Coordination within government and with other partners**
  - **Preparedness planning**
  - **Rapid surveillance and response capacity**
- **USAID (along with other USG) is an important technical and financial partner**