



FAO update on swine influenza

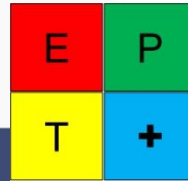
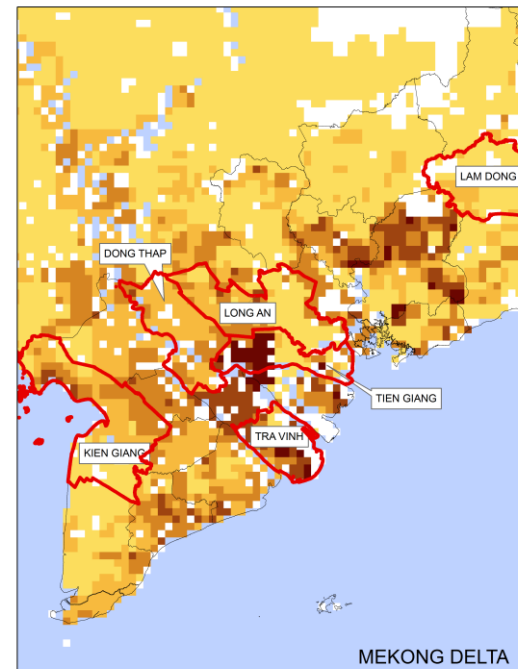
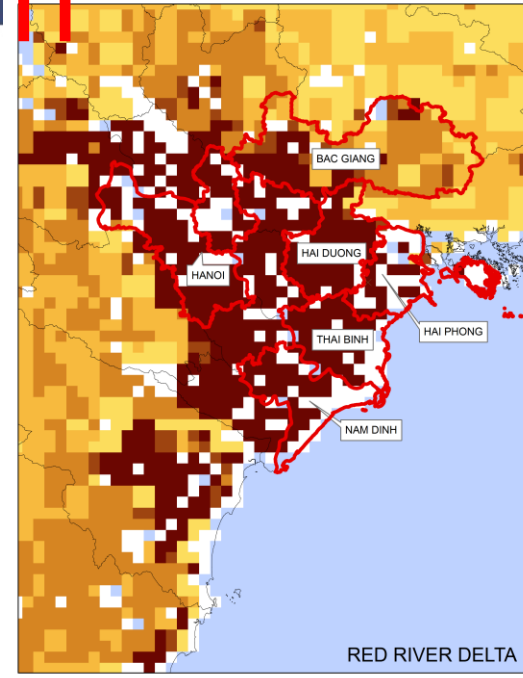
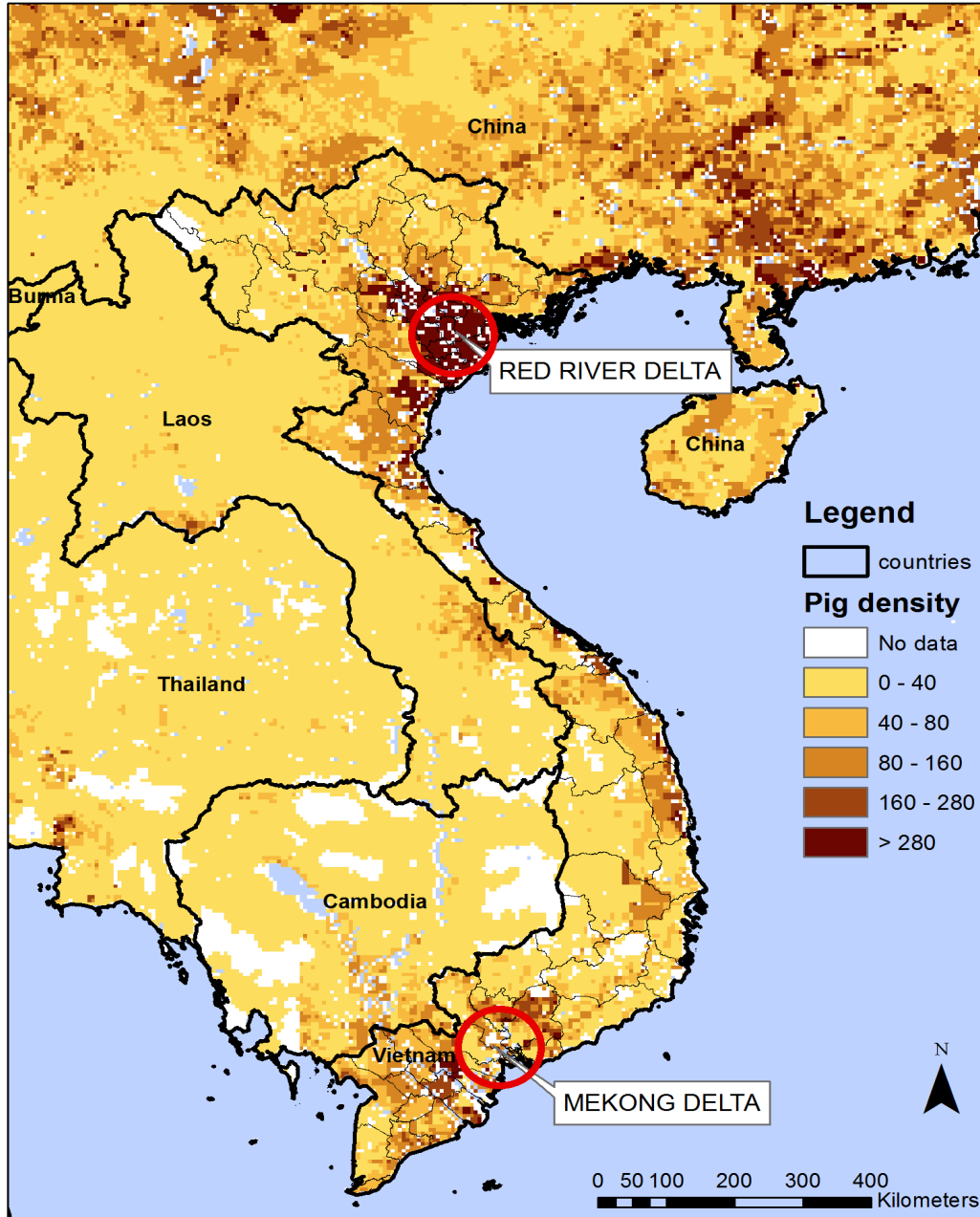
**OFFLU SIV expert group
Annual meeting
16-17 April 2013 - Rome**



EPT+

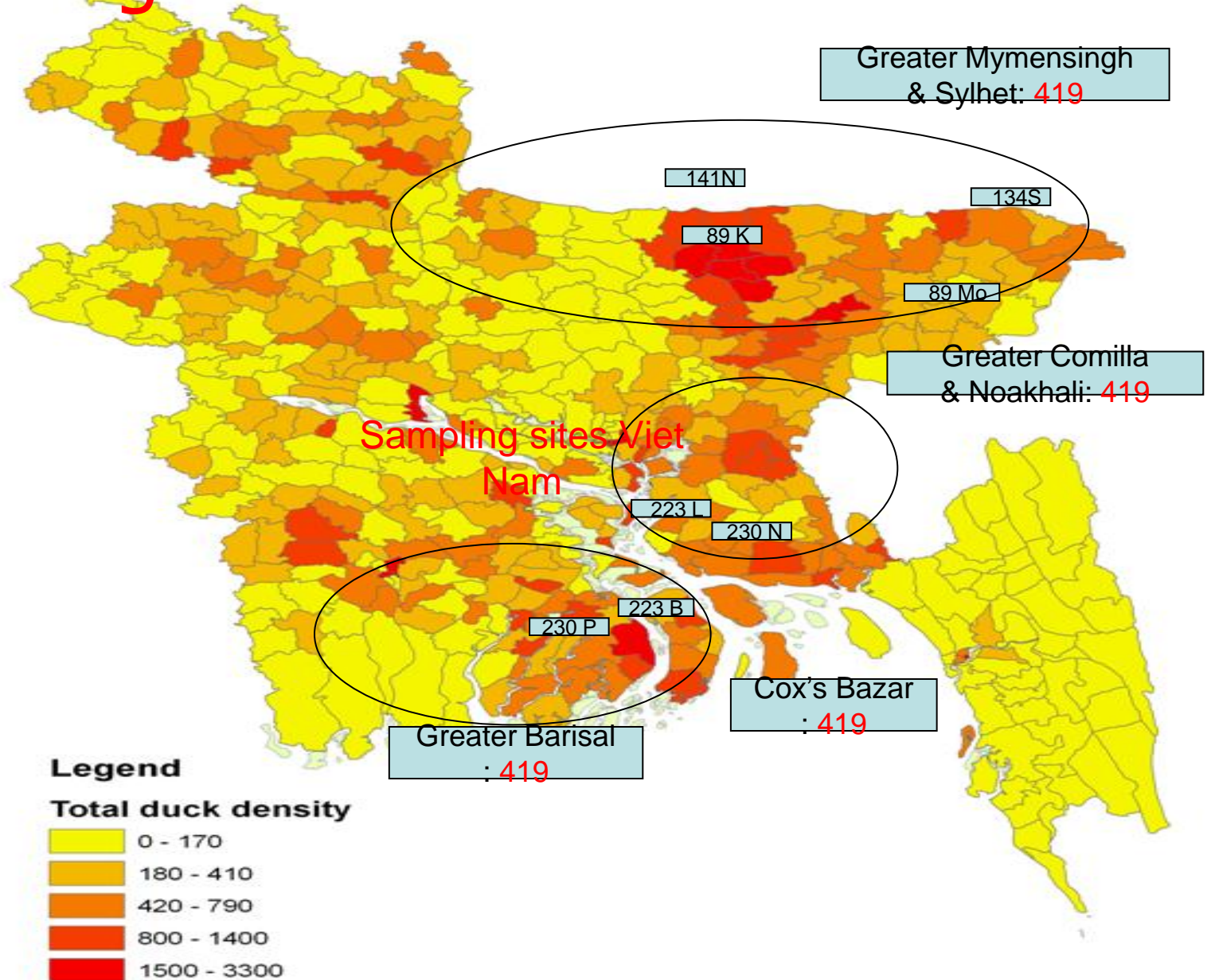
- Second year of USAID funded project - part of EPT program
- Focused on the understanding the role that livestock plays as potential reservoirs for pandemic disease threats initially focused on influenza
- The project contains 4 elements
 - 1) Risk Modeling
 - 2) Influenza **Surveillance** in Farmed Animals (swine>aquatic waterfowl>other)
 - 3) Concurrent Market trade and Commodity Networks assessments
 - 4) Contribution to broader global influenza initiatives such as the EMPRES-i genetic module, **OFFLU**, and others
- Geographic Scope
 - Initially, **Vietnam, China, Thailand, & Bangladesh**

Sampling sites Viet Nam

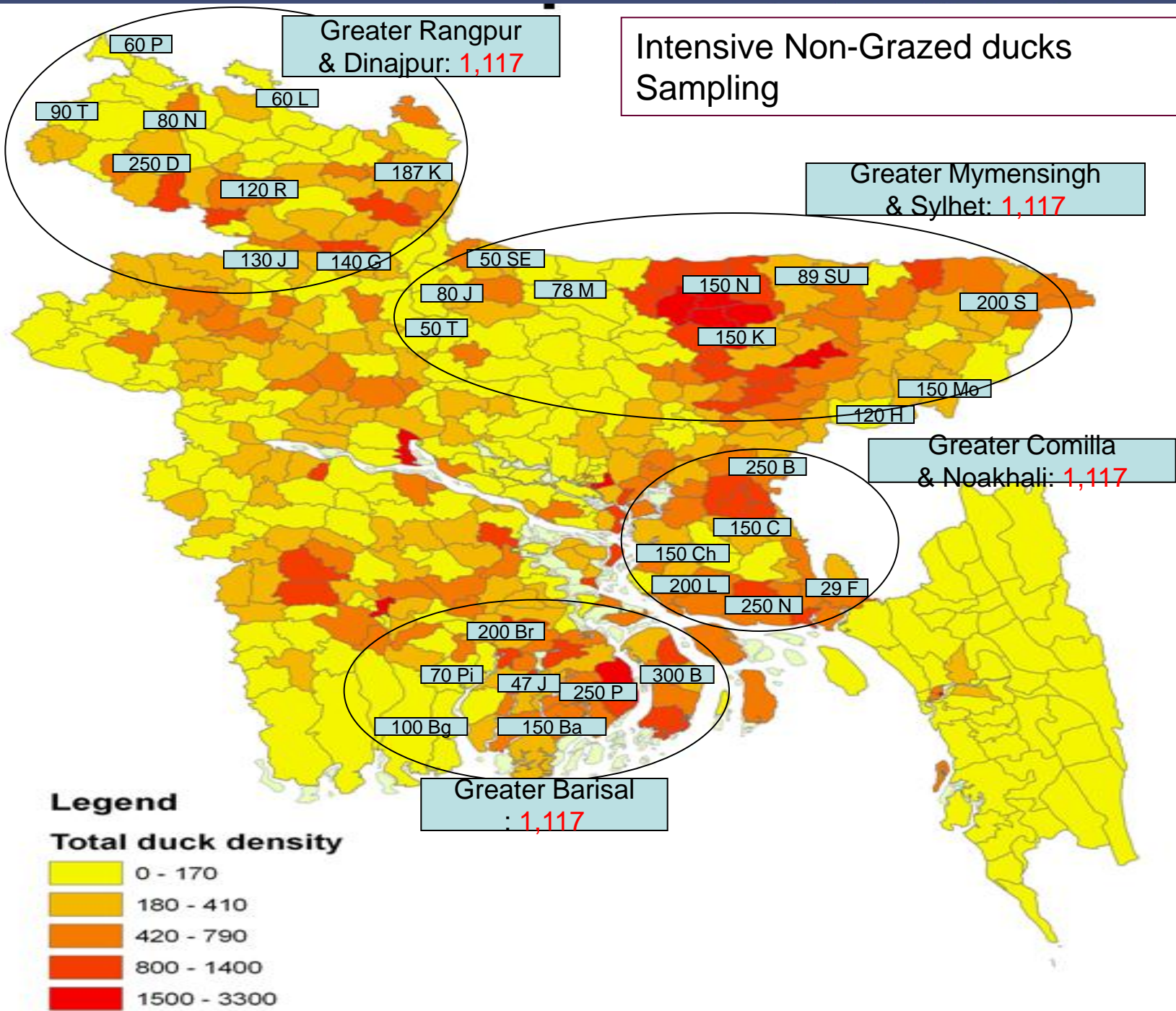


Sampling sites Bangladesh

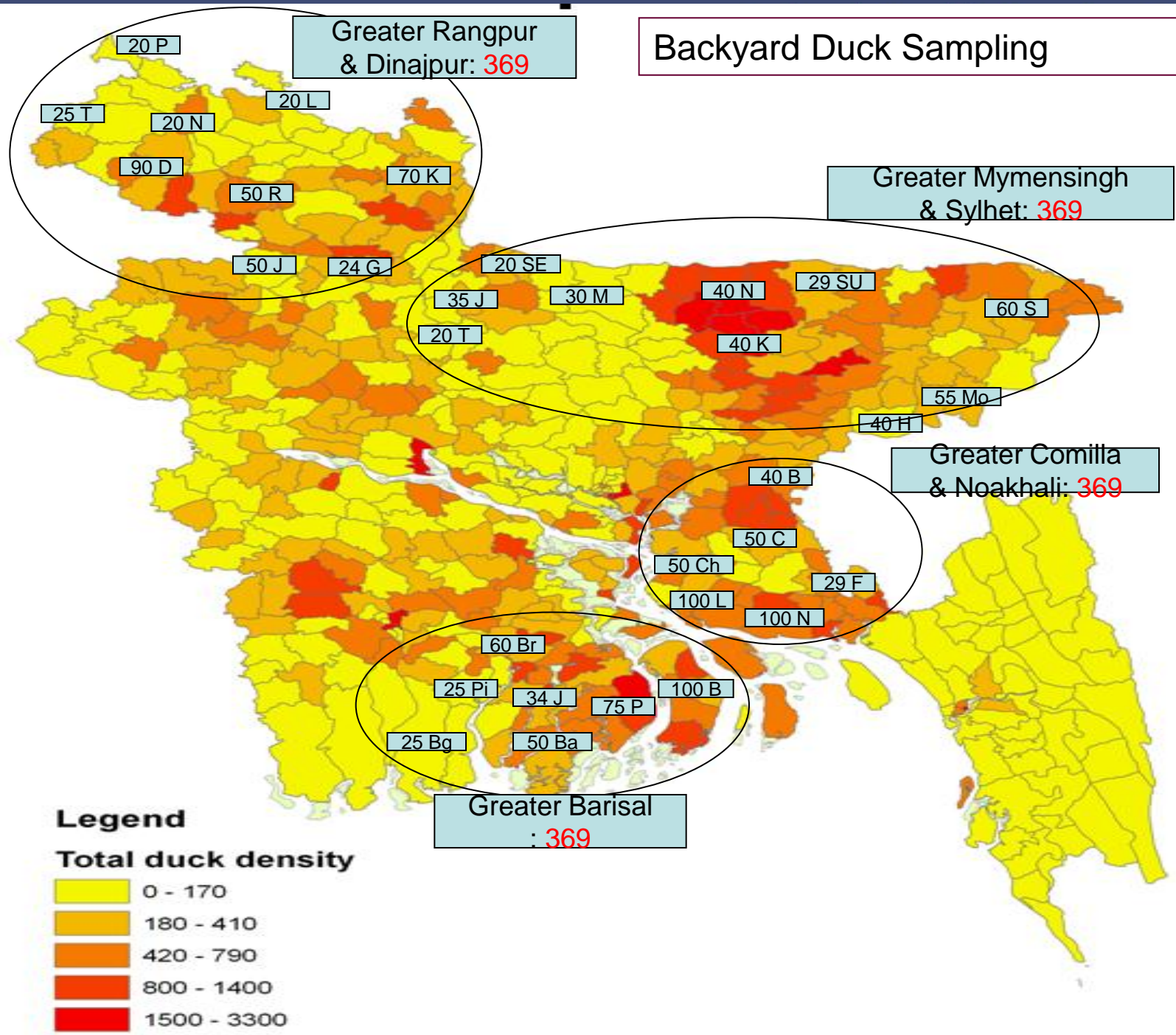
Low Biosecured Grazed Ducks Sampling



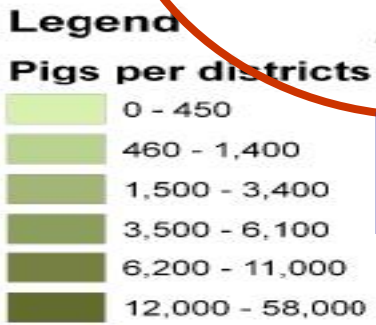
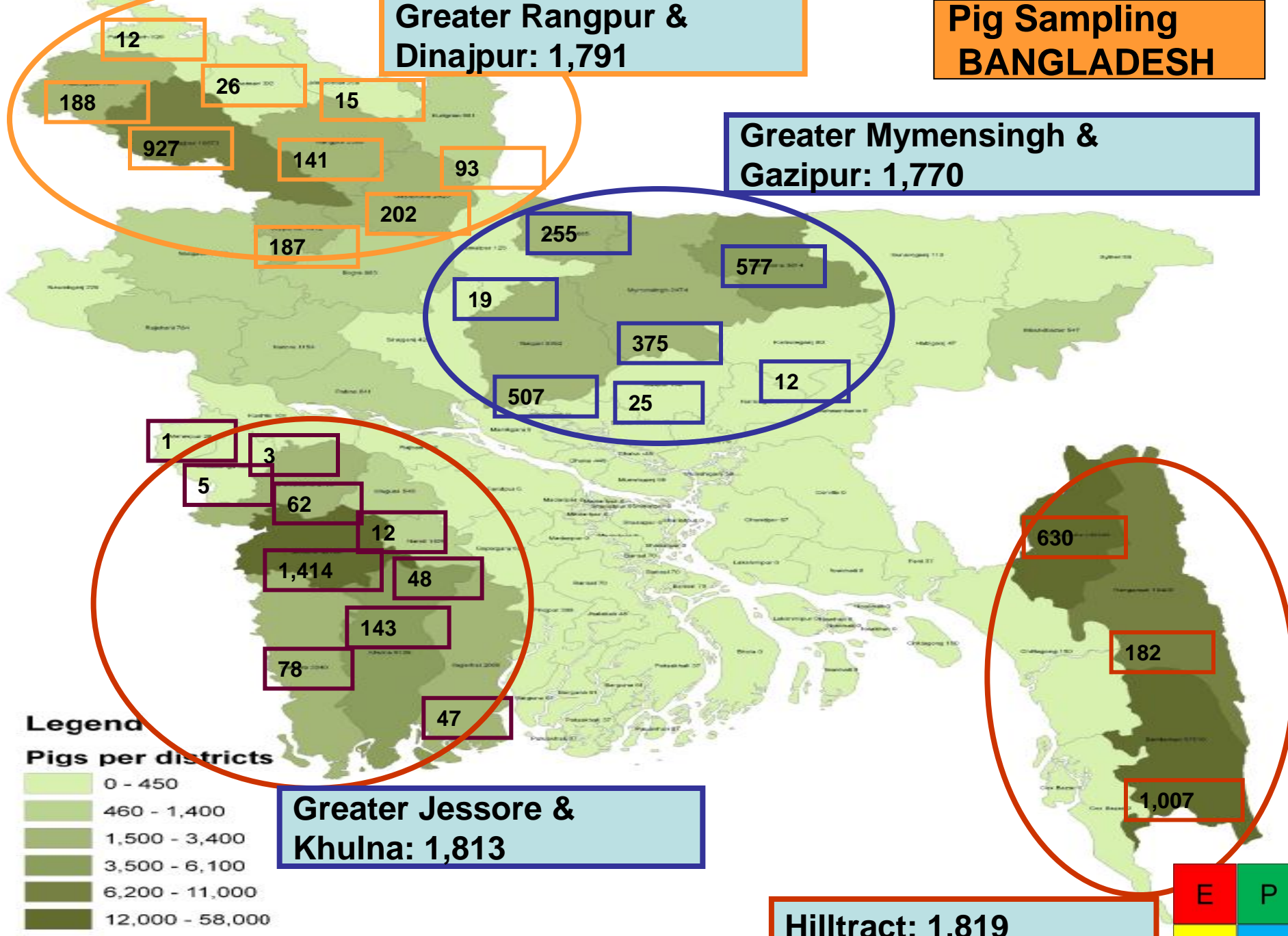
Intensive Non-Grazed ducks Sampling

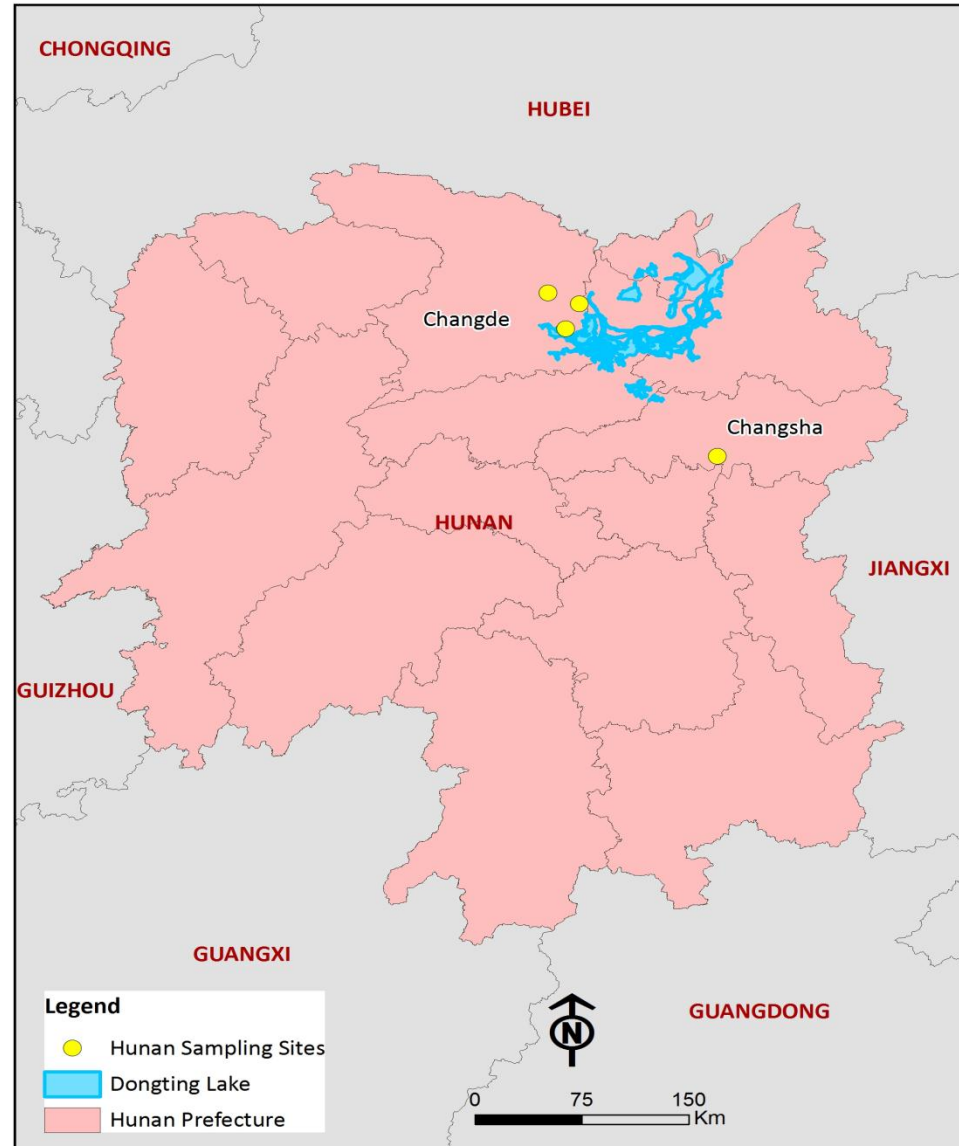


Backyard Duck Sampling



Pig Sampling BANGLADESH





Results (1)



Bangladesh:

- No of Ducks Sampled = 1,643
- No. of Pigs Sampled = 914
- Total samples collected and submitted to partner laboratories = 6,165
- Laboratory Tests of samples = on going
- Field sample collection = on-going

China:

- No. of Pigs sampled = 10,000
- Field sample collection = completed
- Laboratory tests of samples = ongoing

Results (2)



Vietnam:

- First and Second round of sampling = completed
- Third and last round of sampling = will start in June, 2013
- First round of sampling test results = 2 farms in North + for SIV by both VI and PCR; 2 farms in South + for SIV by PCR and 1 farm + for SIV by both VI and PCR.
- Second round of sampling test results= 1 farm in North + for SIV by PCR, VI and serology; sample testing for South samples = on going

Note:

- Sharing of laboratory test results in the 3 countries will be subject to national government approval (as indicated in Letters of Agreement)

FAO tools for SIV (1)



- EMPRES-i: Global animal disease information system
 - Disease tracking (outbreaks e.g. pH1N1, new events e.g. H3N2v)
 - Analysis Module
 - Surveillance Module
 - Genetic Module
- <http://empres-i.fao.org/eipws3g/>

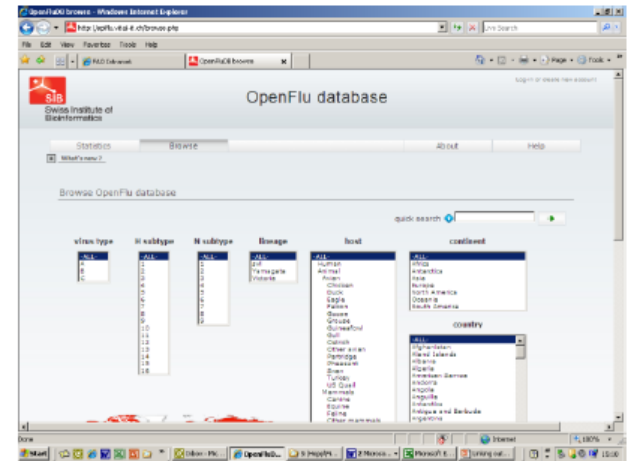


EMPRES-i

Sequence ID number



Virus information



OpenFluDB

Diseases Events

Search Criteria Result List 1

Export to PDF Export to CSV Export to MAP

11

<input checked="" type="checkbox"/>	Status	ID	Genetic Link	Rep. Date	Obs. Date	Disease	Country/Territory	Admin 1	Affected Species
<input type="checkbox"/>		160240	Not Available	01/03/2011	12/02/2011	Highly pathogenic avia...	Viet Nam	Quang Ninh	domestic, duck
<input type="checkbox"/>		160188	Not Available	23/02/2011	10/02/2011	Highly pathogenic avia...	Viet Nam	Thai Nguyen	domestic, chicken
<input type="checkbox"/>		160187	Not Available	23/02/2011	10/02/2011	Highly pathogenic avia...	Viet Nam	Vinh Phuc	domestic, chicken,
<input type="checkbox"/>		159049	Validated link	28/12/2007	07/12/2007	Highly pathogenic avia...	Viet Nam	Son La	
<input type="checkbox"/>		159018	Validated link	24/01/2008	10/01/2008	Highly pathogenic avia...	Viet Nam	Tuyen Quang	
<input type="checkbox"/>		159009	Validated link	15/02/2008	02/02/2008	Highly pathogenic avia...	Viet Nam	Hai Duong	
<input type="checkbox"/>		158708	Not Available	17/02/2011	13/02/2011	Highly pathogenic avia...	Viet Nam	Kon Tum	domestic, chicken
<input type="checkbox"/>		158706	Not Available	17/02/2011	04/02/2011	Highly pathogenic avia...	Viet Nam	Nam Dinh	domestic, duck, dor
<input type="checkbox"/>		158686	Not Available	19/01/2004	11/01/2004	Highly pathogenic avia...	Viet Nam	Ha Tay	
<input type="checkbox"/>		158684	Not Available	16/01/2004	27/12/2003	Highly pathogenic avia...	Viet Nam	Bac Ninh	
<input type="checkbox"/>		158682	Not Available	13/01/2004	24/12/2003	Highly pathogenic avia...	Viet Nam	Ha Nam	
<input type="checkbox"/>		158641	Not Available	14/02/2011	29/01/2011	Highly pathogenic avia...	Viet Nam	Lang Son	domestic, chicken
<input type="checkbox"/>		157427	Not Available	08/12/2010	02/12/2010	Highly pathogenic avia...	Viet Nam	Cau Mau	domestic, chicken
<input type="checkbox"/>		157260	Not Available	06/11/2010	10/11/2010	Highly pathogenic avia...	Viet Nam	Nha An	domestic, duck, dor

Search Criteria

Close

Disease Event Details



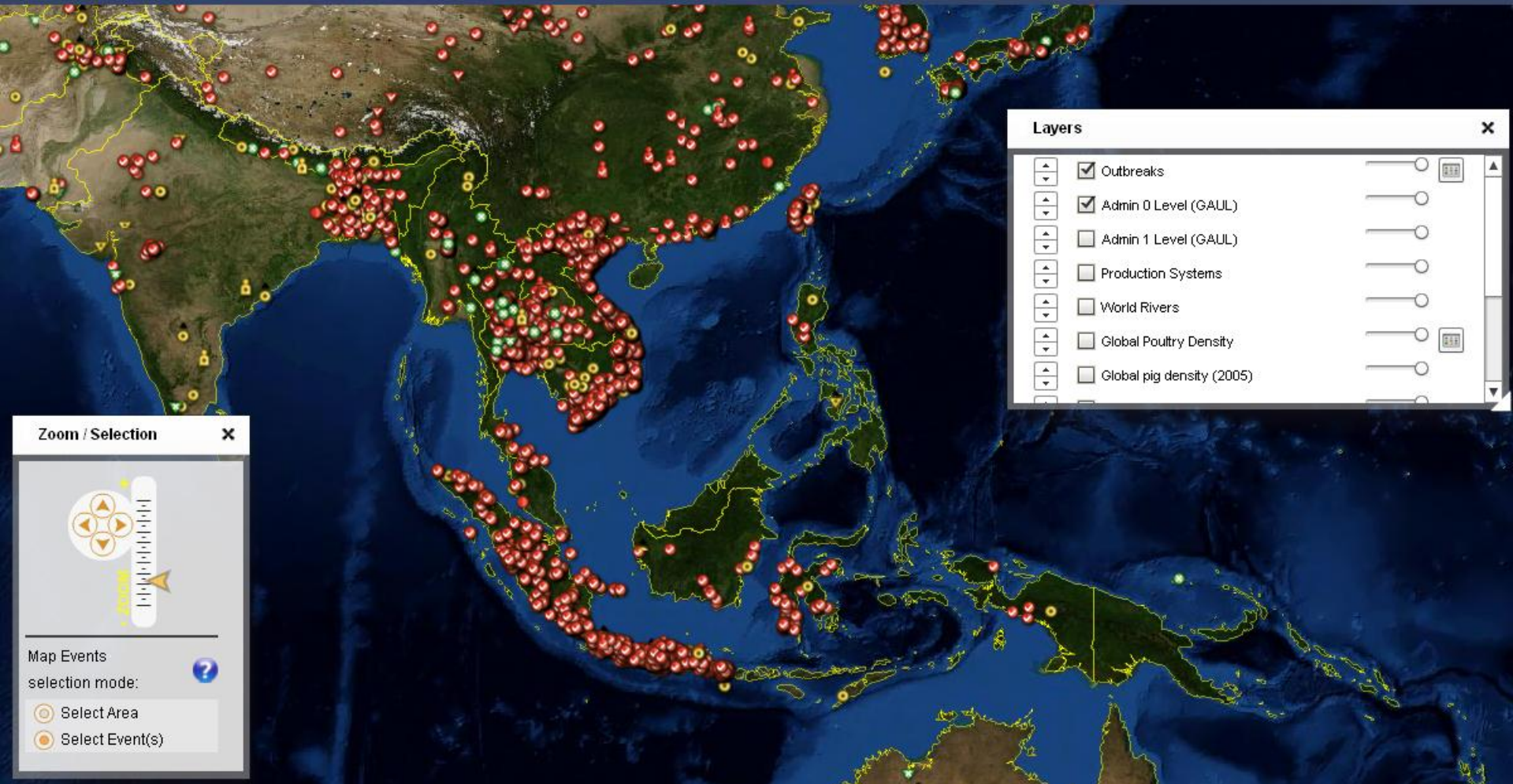
General Info			Location						
Disease Event ID	Reporting date	Observation date	Region	Admin 1 (Country)	Locality	Lat/Long	Quality of Coordinates		
151584	27/01/2010	18/01/2010	Asia	Soc Trang (Viet Nam)	Phu Giao hamlet, Thanh Quoi	9.4473658 / 105.7955982	Centroid Admin3		
151874	Validated link	04/02/2010	29/01/2010	Highly pathogenic a	Viet Nam	Soc Trang	domestic, chicken		
Disease									
Status	Disease			Serotype		Source			
Confirmed	Highly pathogenic avian influenza			H5N1		National authorities			
Species affected									
An.Type	An.Class	Species			At Risk	Cases	Deaths	Destroyed	Slaughtered
Domestic	Birds	duck			500	500	0	0	0
151622	Non Link	27/01/2010	14/01/2010	Highly pathogenic a	Viet Nam	Lai Chau	domestic, unspecified bird, domes		
Laboratories									
Disease Tested	Species	Test	Result	Result Date	Reference Laboratory				
Highly pathogenic avian influenza	duck	RRT-PCR (real-time reverse transcriptase PCR)	Positive	20/01/2010					
151580	Non Link	24/01/2010	15/01/2010	Highly pathogenic a	Viet Nam	Ha Tinh	domestic, duck, domestic, chicken		
Genetic Information									
Validated link(s) (1)									
						Definition of links	Suggestions		
Type/Subtype	Isolate Name			Segments Sequences	Key Mutations				
A/H5N1	A/duck/Vietnam/5/2010			HA;					

Genetic Information						
Linked (3)		Pre-Linked (4)				
Type/Subtype	Isolate Name			Segments Sequences	Key Mutations	
A/H5N1	A/chicken/Cambodia/TKCMB5T/2010			NS;MP;NA;NP;PA;PB1;PB2;HA;	NS1;M2;PB1-F2;HA;	
A/H5N1	A/chicken/Cambodia/TKCMB8F/2010			MP;NA;NP;PA;PB1;PB2;HA;NS;	M2;PB1-F2;HA;NS1;	
A/H5N1	A/chicken/Cambodia/TKCMB1F/2010			NS;MP;NA;NP;PA;PB1;PB2;HA;	NS1;M2;PB1-F2;HA;	

 Zoom / Selection

 Layers

 Download image



Zoom / Selection

X



Map Events



selection mode:

- Select Area
- Select Event(s)

<http://hqlqatomc04:8002/ei3gmapcomp/?MAPREQUEST=54154078x8e56x46f6x977dx82c8d92a9336>

Layers

Download image

Layers [X]

- Outbreaks
- Admin 0 Level (GAUL)
- Admin 1 Level (GAUL)
- Production Systems
- World Rivers
- Global Poultry Density
- Global pig density (2005)

Zoom / Selection [X]



Map Events

selection mode:

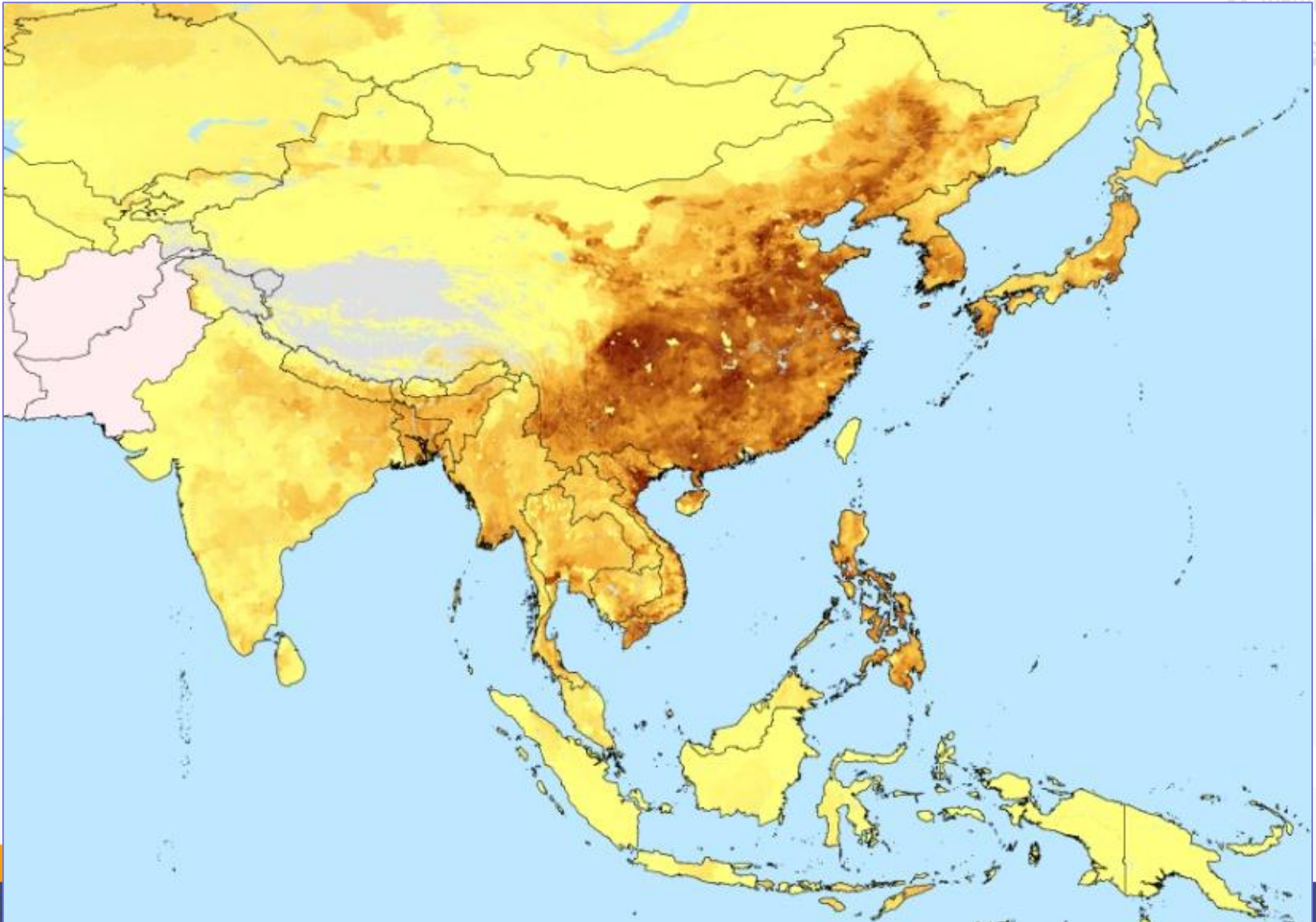
- Select Area
- Select Event(s)

FAO tools for SIV (2)

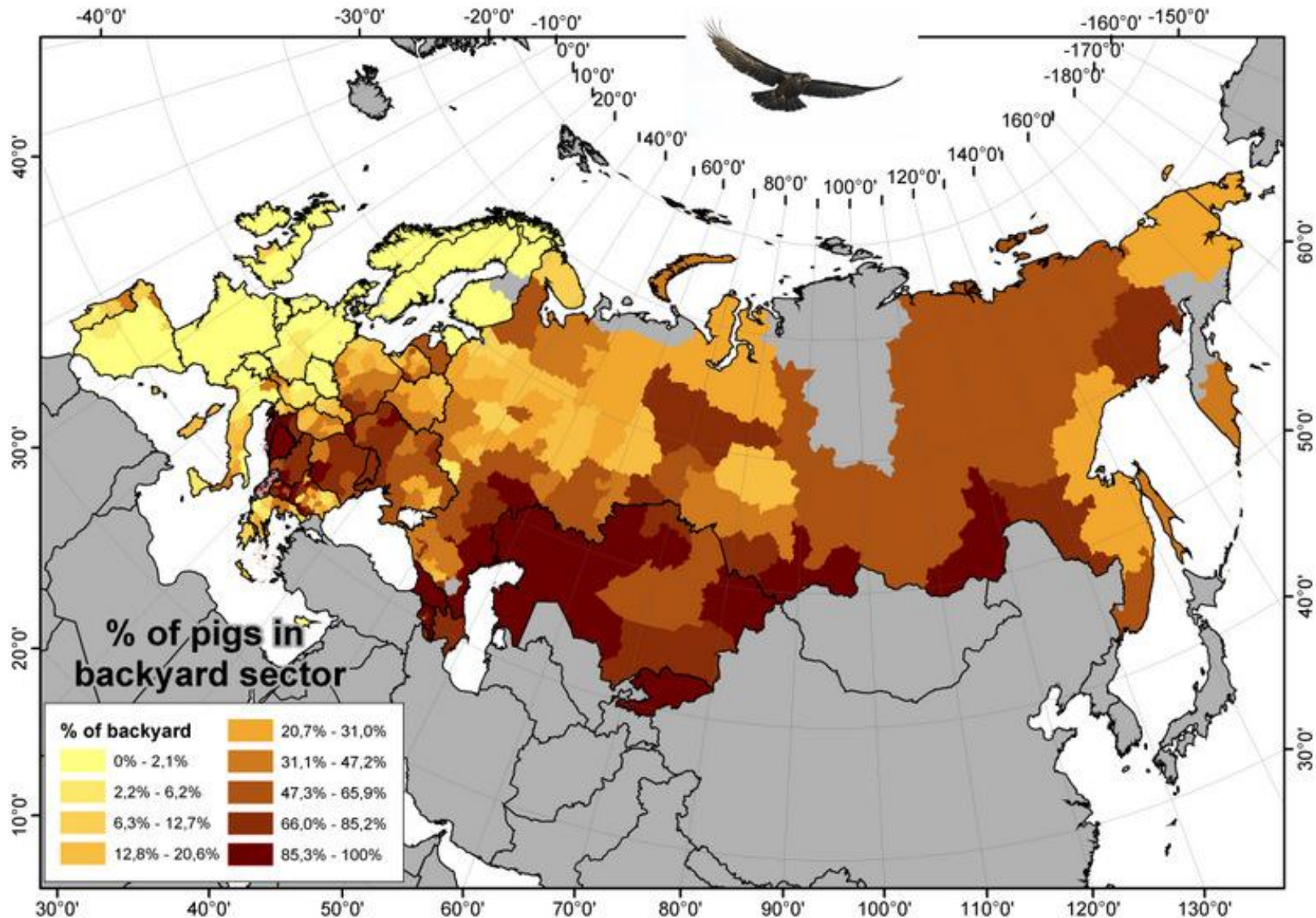


- GLiPHA : Global Livestock Production and Health Atlas
 - Agro-ecological data
 - Population data
 - Production data
 - Updated maps
- <http://kids.fao.org/glipha/>

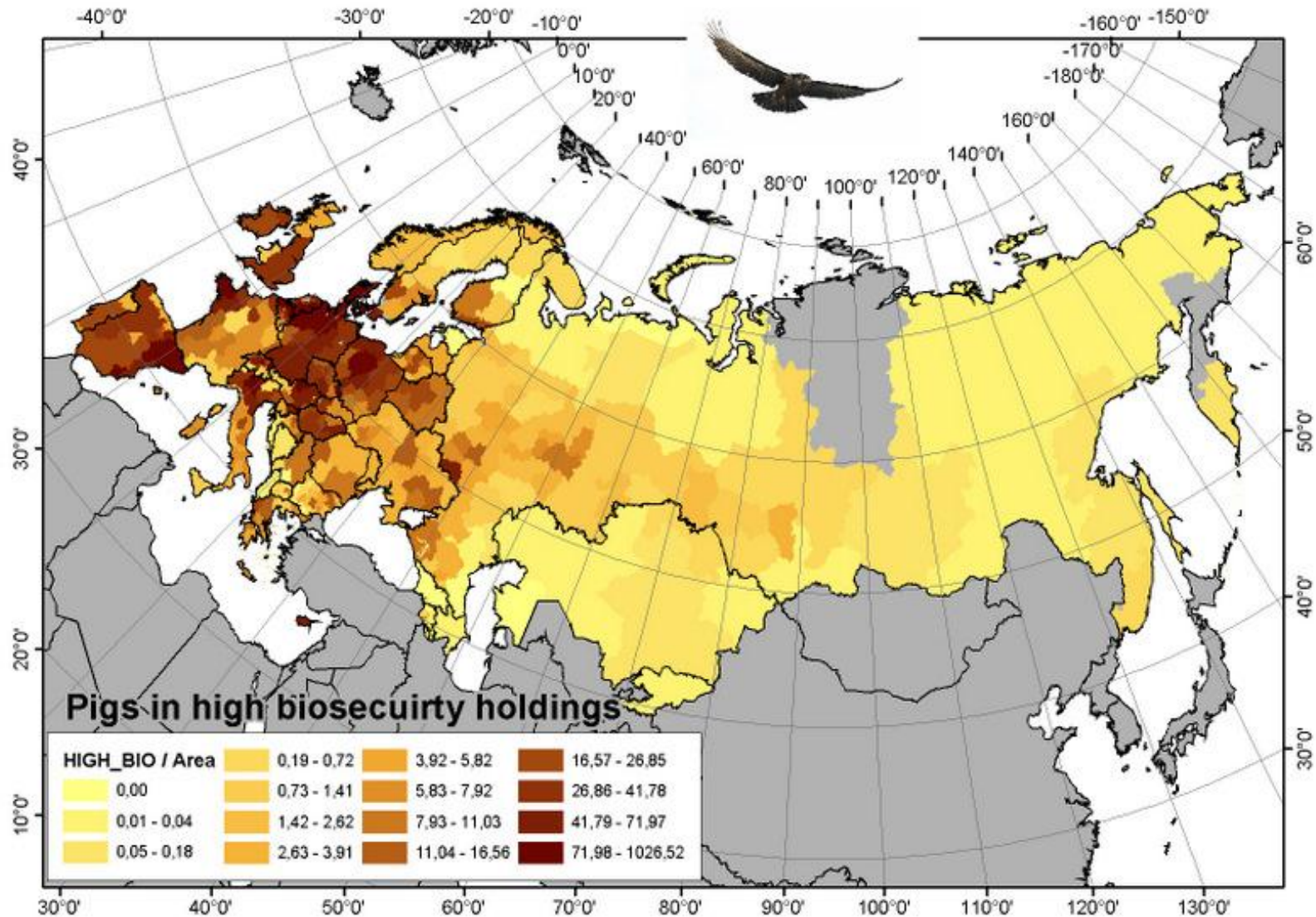
Pig densities – new FAO model (2012)



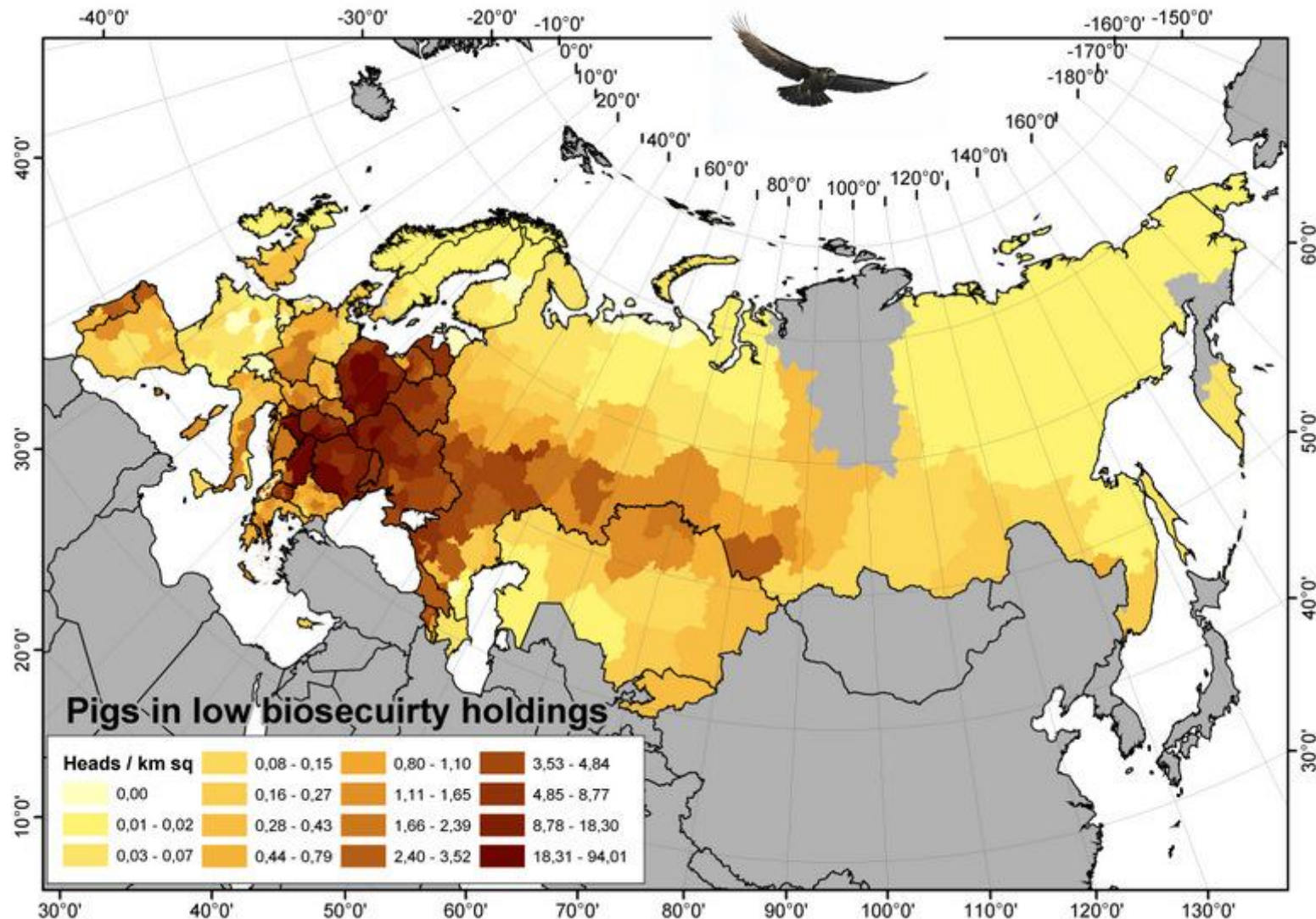
Northern Eurasia - backyard



Northern Eurasia – high biosecure

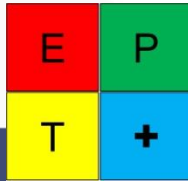
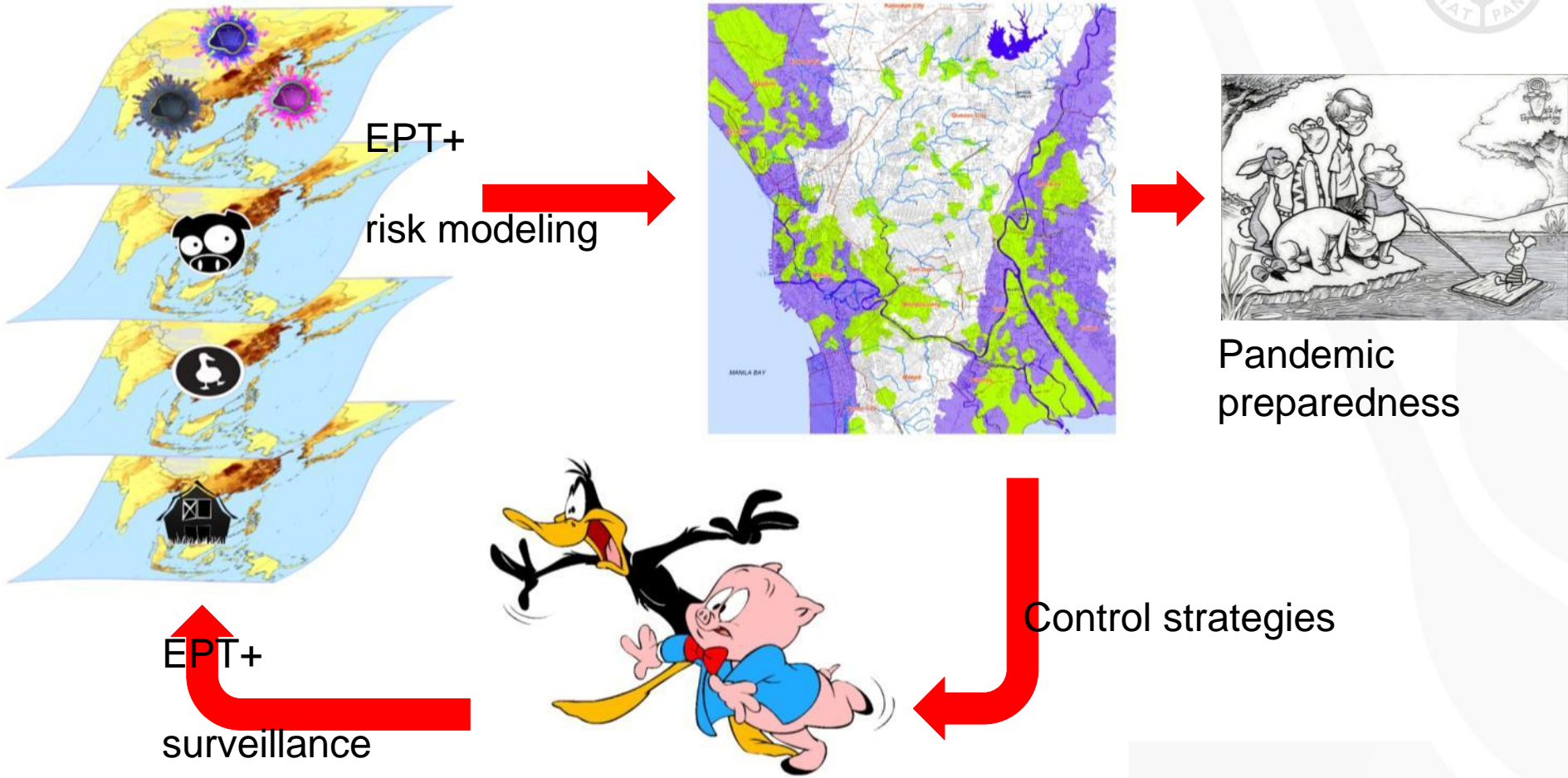


Northern Eurasia – low biosecure





EPT+ risk modelling strategy:



General conclusions (1)



- Harmonisation of approaches
- Capacity needs
 - Equipment, training
 - Epidemiological and laboratory
- Optimize surveillance approach
 - Maximize sample output / minimize effort
 - Integration of various disease surveillance
 - PRRS, FMD, CSF, ...
 - Need for incentives (e.g. drugs)



General conclusions (2)

- Political engagement
 - Overcome reporting reluctance
- Different strategies for different regions
- Integrated systems approach
 - Links with PH side (Human-Animal Interface)
 - (One flu) One Health concept