

Update on Swine Influenza Virus Surveillance in Vietnam

OFFLU SIV Group technical meeting, 3 – 4 Dec 2015

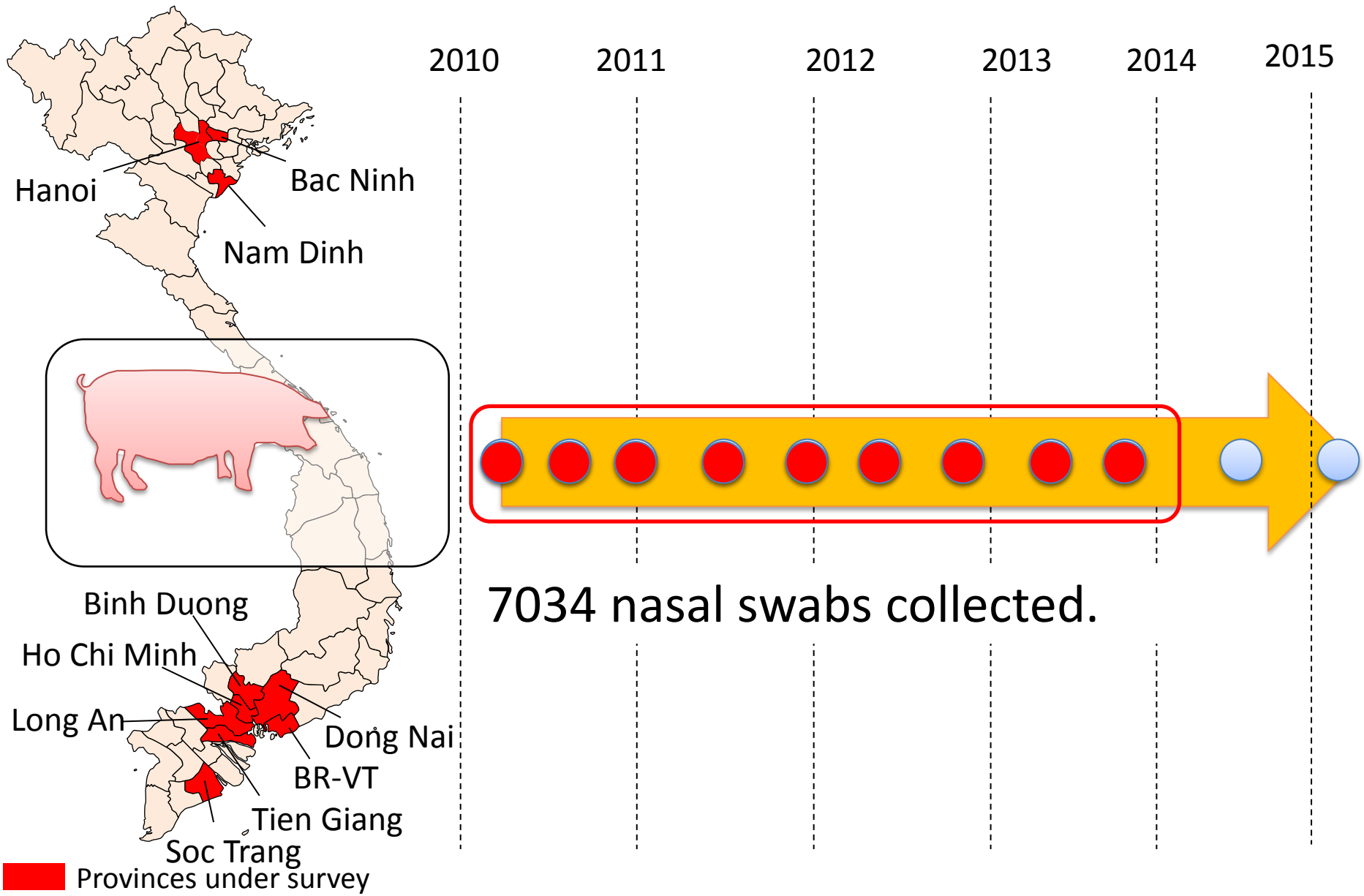
OIE Headquarters, Paris

Tung Nguyen, DAH-Vietnam

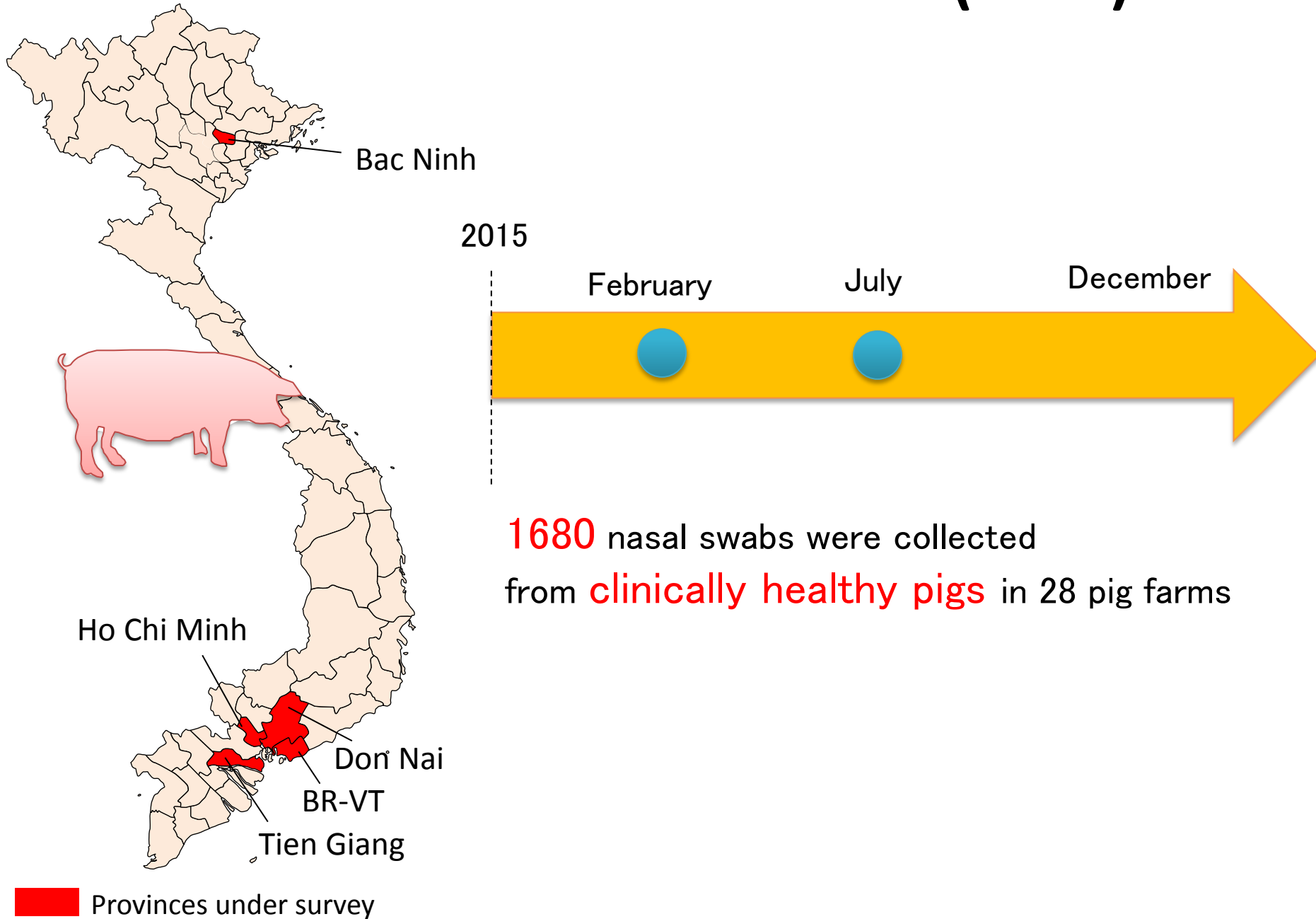
Swine Influenza surveillance activities in Vietnam

- Surveillance implemented by Department of Animal Health (DAH)
 - NIAH(Japan)
 - CDC Atlanta
 - FAO: EPT+ (now EPT2)
- Surveillance conducted by National Institute of Veterinary Research (NIVR): with CIRAD

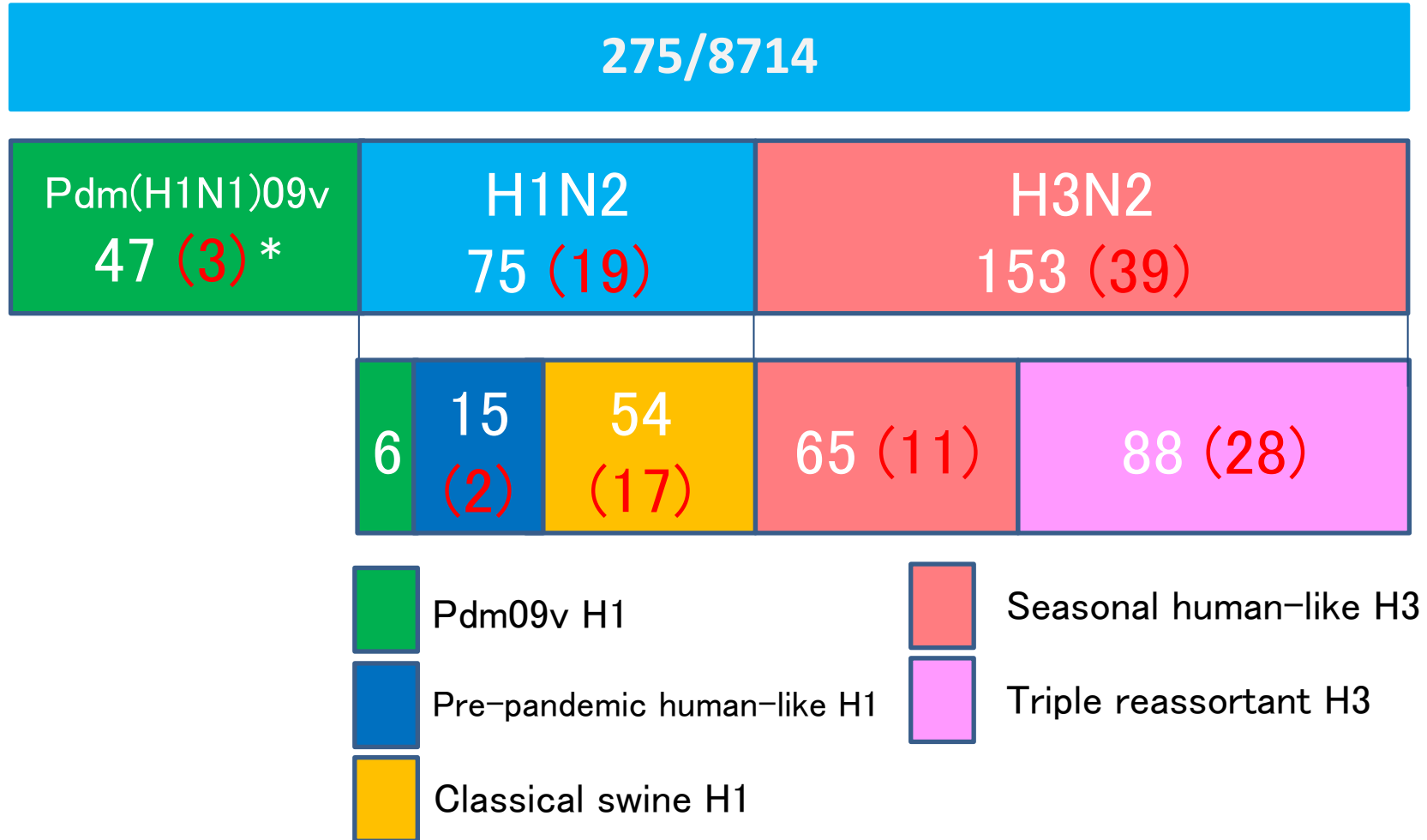
SIV surveillance DAH-NIAH (2011-2014)



SIV surveillance DAH-NIAH (2015)








Number of isolates and the genetic analysis of HA genes ISV in 6-year-surveillance



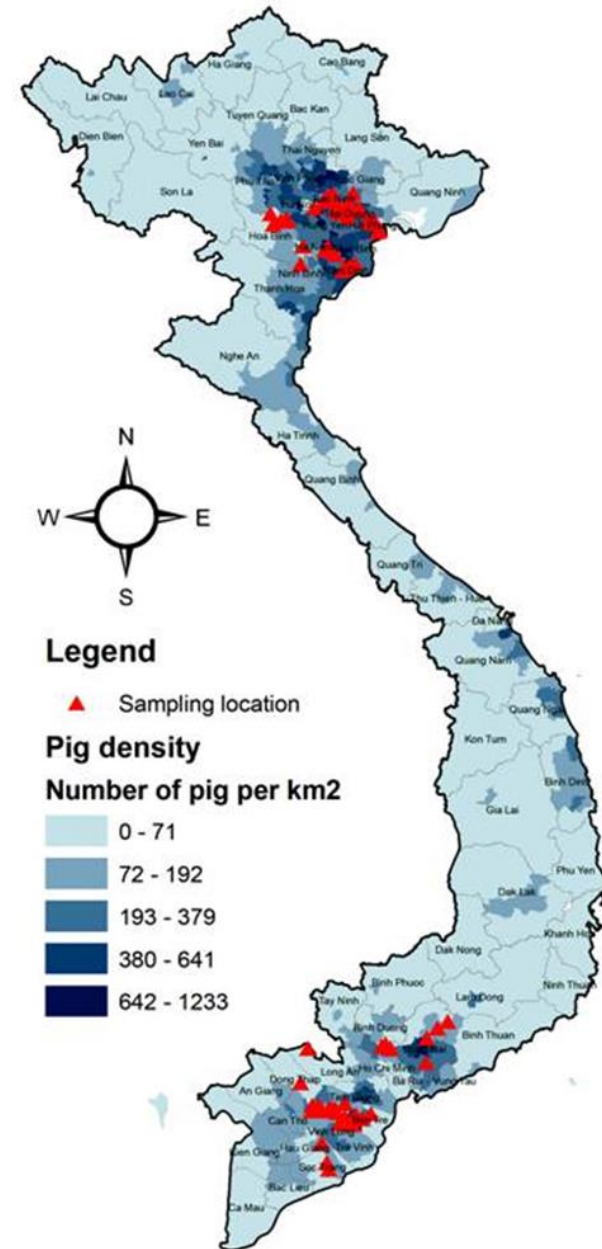
* The number of isolates in 2015 are shown in parentheses.

Gene constellations of SIV

Genotype	Subtype	Gene origin from:								Province	Isolation year
		HA	NA	PB2	PB1	PA	NP	M	NS		
i	H1N1				 Pdm09					Nam Dinh, Binh Duong, Ba Ria Vung Tau, Tien Giang, Bac Ninh	2010, 2011, 2012, 2013, 2014
ii	H1N2	 Seasonal Human								Binh Duong, Dong Nai	2010, 2014 , 2015
iii										Bac Ninh	2012
iv				 TR						Tien Giang	2011
v										Tien Giang	2012
vi										Dong Nai	2011
vii										Tien Giang	2012
viii										Bac Ninh	2013
ix										Tien Giang	2014
x										Tien Giang, Ba Ria Vung Tau	2015
xi										Dong Nai	2015
xii		H3N2				 TR					Binh Duong
xiii	 Seasonal Human									Tien Giang, Dong nai	2011, 2015
xiv										Dong Nai	2012, 2013, 2014 , 2015
xv										Bac Ninh	2012
xvi										Bac Ninh	2013, 2014 , 2015

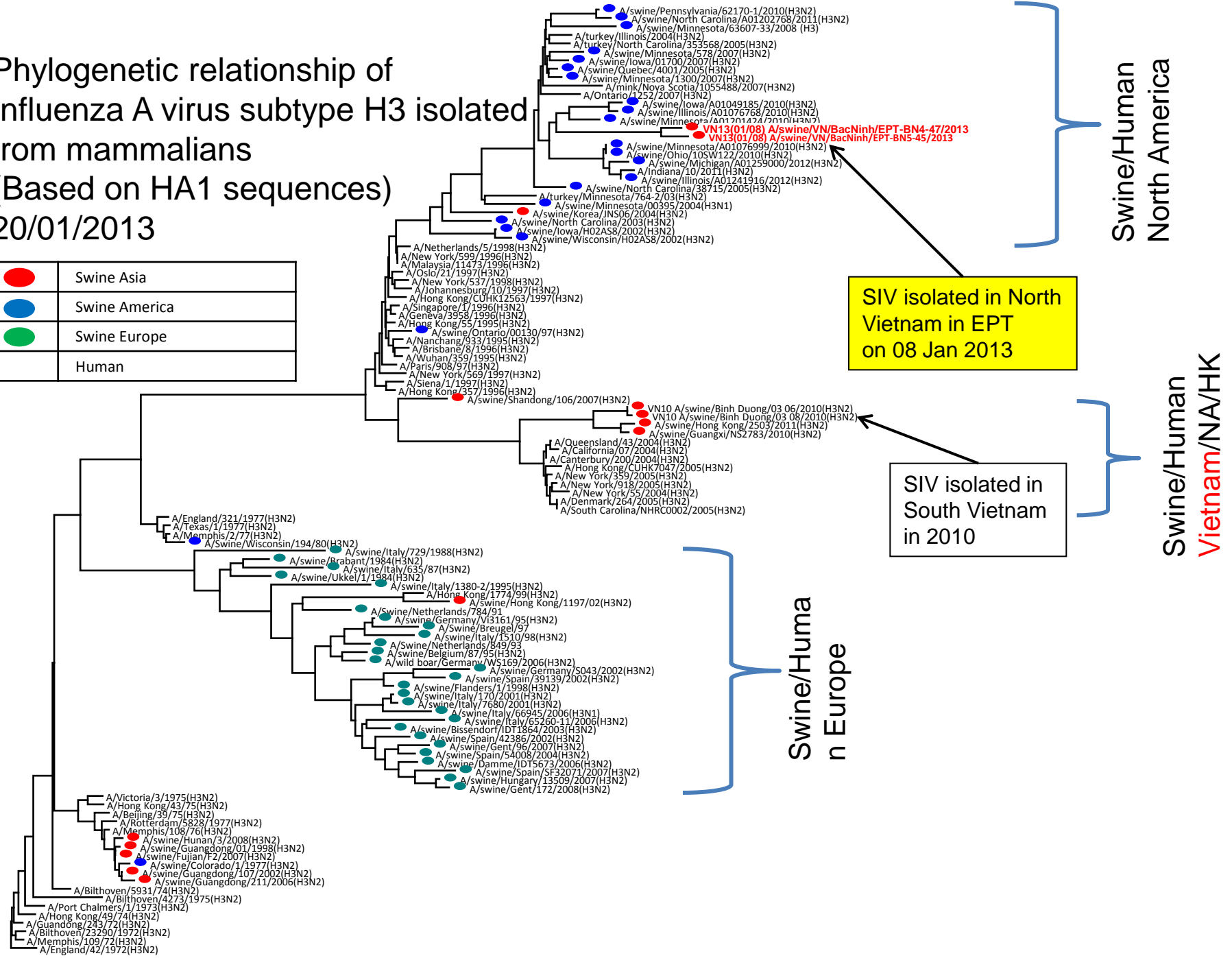
EPT+ phase 1 (2012-2013)

- 7.200 swab and 1.434 sera collected from 88 farms (32 breeding and 56 fattening) in 12 provinces
- SIV positive was 6.94% in total
- SIV positive farm: 10.28% for breeding and 4.79% for fattening
- 75% provinces selected was positive
- SIV Ab positive was 26.76% in total
- 100% provinces selected was positive
- 6 viruses isolated (H1N2 and H3N2)



Phylogenetic relationship of Influenza A virus subtype H3 isolated from mammals (Based on HA1 sequences) 20/01/2013

●	Swine Asia
●	Swine America
●	Swine Europe
	Human



SIV isolated in North Vietnam in EPT on 08 Jan 2013

SIV isolated in South Vietnam in 2010

Swine/Human North America

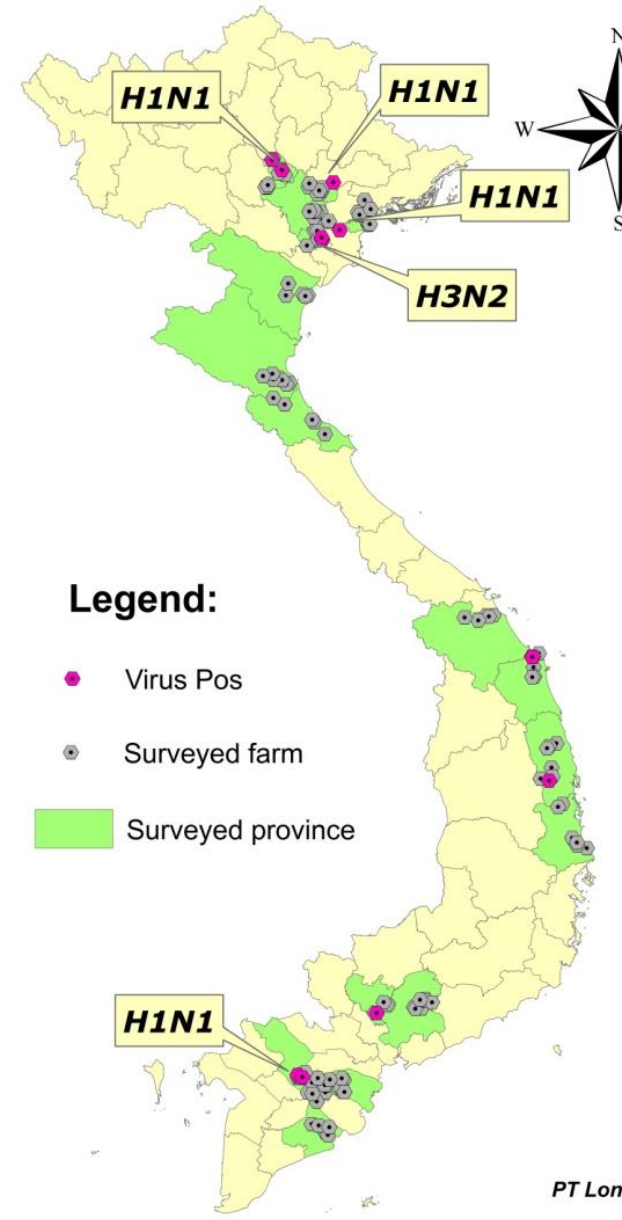
Swine/Human Vietnam/NA/HK

Swine/Human in Europe

0.02

EPT+ phase 2 (2014-2015)

- 6760 swabs (135 pools) and 2534 sera collected from 169 farms/house hold in 19 provinces
- 48/1.352 pools were positive (3,55%).
- 14/169 farm positive for SIV (8%)
- 1.139/2.534 sera were Ab positive (45%)
- 130/169 farms were positive either swab or sera (77%)



DAH-CDC

Cross--sectional study

- 4 rounds of sampling in 9 study provinces (9/2013, 12/2013, 3/2014 and 6/2014) including 7,650 swab and 7,650 blood (189 swine slaughterhouses)
- A total of 1,169 pool samples were tested to detect type A virus. Of these tested pools, 44 (3.76%) pools were positive.
- Subsequently tested individual swabs showed 34,04 % positive

DAH-CDC

Longitudinal study

- Three sampling rounds in February, March and April 2015.
- A total of 8,100 swab and 8,100 blood samples were taken from 8,100 animals (4,050 pigs and 4,050 poultry) at 270 households in 9 study
- 1,040 pooled swabs tested, 6 pools (0.57%) positive (3 pigs and 3 poultry)

NIVR-CIRAD SIV surveillance

