

WOAH 2<sup>nd</sup> Technical Meeting on  
The role of wildlife in potential spread of ASFv in the American Continent  
March 29, 2023

# Prevention and Control of ASF in Asia - Commercial and Backyard Swine Production

Dirk Pfeiffer

Chow Tak Fung Chair Professor of One Health (City University of Hong Kong, PR China)

Professor of Veterinary Epidemiology (Royal Veterinary College, London, UK)

Adjunct Professor (China Animal Health & Epidemiology Centre, Qingdao, PR China)

**#53**

[QS] World University  
Rankings 2022



**#1**

[QS] World University  
Rankings 2021  
Veterinary Science



# Context

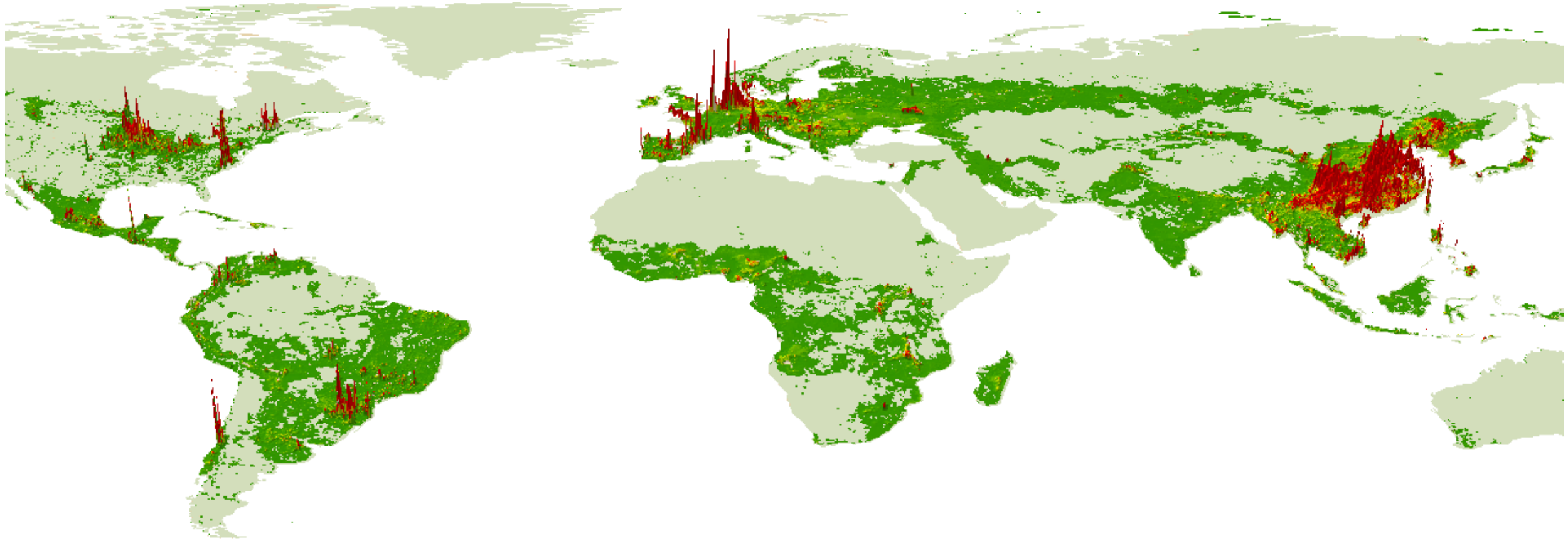


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# Pig Density in 2015

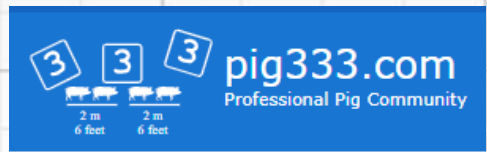
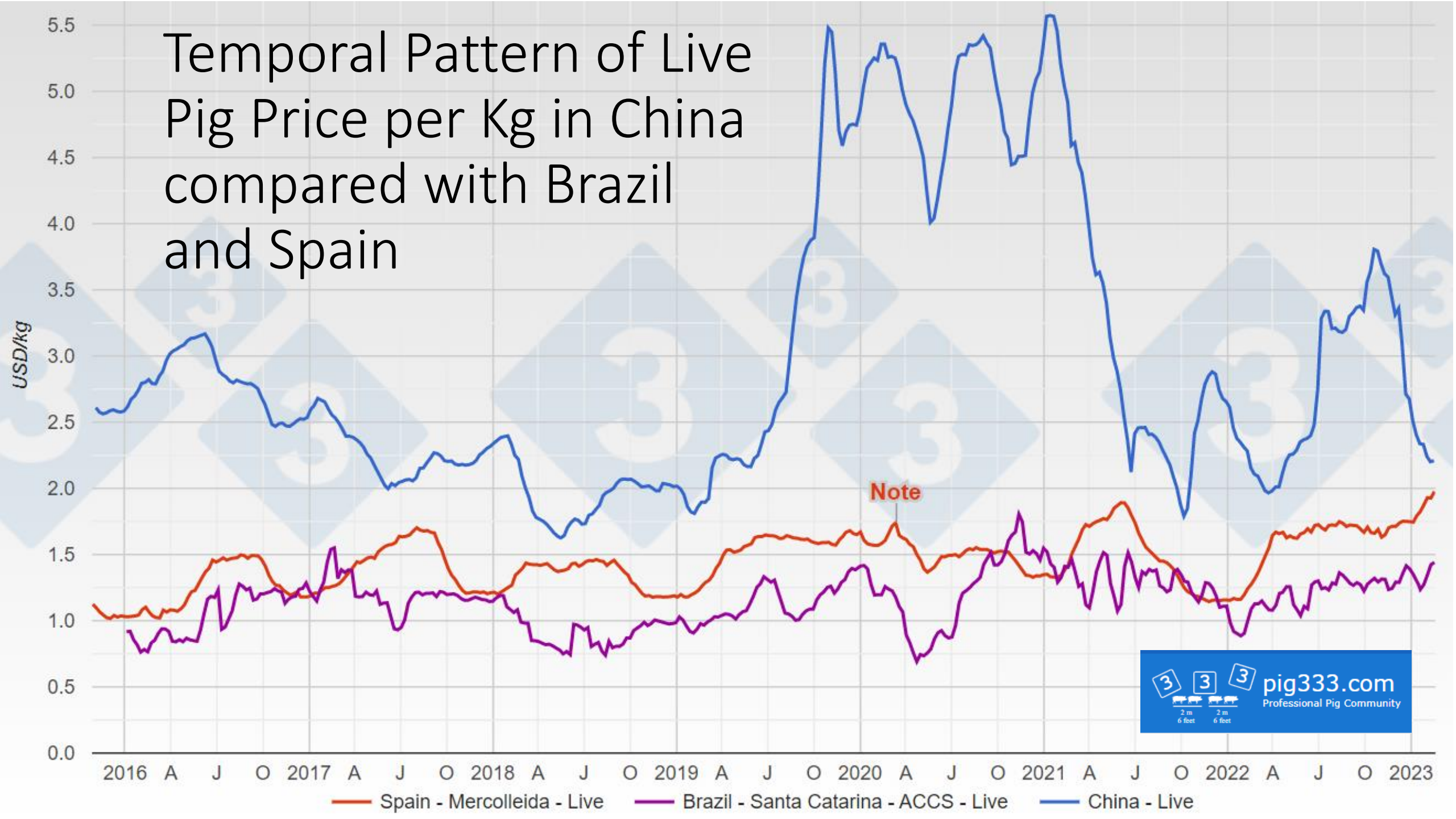


# Distribution of Pig Farm Sizes in China in 2016

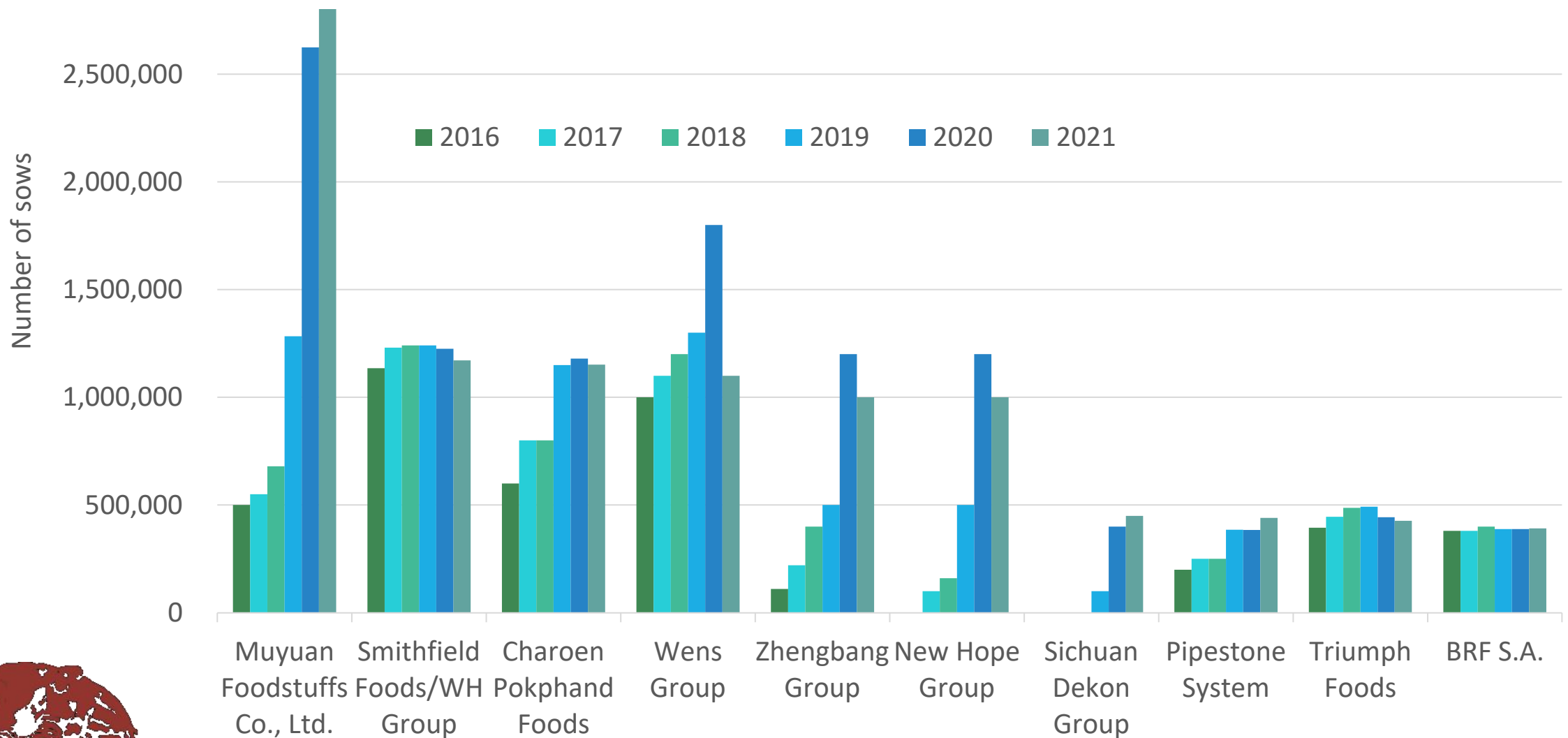
Farms (no. of pigs)	Number	Percent
<b>1 - 99</b>	<b>41,634,230</b>	<b>97.7%</b>
100 - 499	718,590	1.7%
500 - 999	167,224	0.4%
1,000 - 4,999	77,737	0.2%
5,000 - 9,999	7,079	0.02%
$\geq 10,000$	4,572	0.01%

Source: National Bureau of Statistics of China

# Temporal Pattern of Live Pig Price per Kg in China compared with Brazil and Spain



# Top 10 Global Pig Mega Producers (no of sows) between 2016 and 2021



BUSINESS NEWS DECEMBER 7, 2020 / 1:27 PM / UPDATED A MONTH AGO

## Flush with cash, Chinese hog producer builds world's largest pig farm

from Dominique Patton (Reuters): Muyuan's new mega farm near Nanyang, which will eventually house 84,000 sows and their offspring, is by far the largest in the world, roughly 10 times the size of a typical breeding facility in the United States. It aims to produce around 2.1 million pigs a year.



A drone image shows Muyuan Foods newly built multi-storey pig farm in Neixiang county, Henan province, China November 6, 2020. Muyuan Foods/Handout via REUTERS

## *China's Bid to Improve Food Production? Giant Towers of Pigs.*

High-rise hog farms have sprung up nationwide as part of Beijing's drive to enhance its agricultural competitiveness and reduce its dependence on imports.

# Smuggling of Meat

South China Morning Post



## **‘Guerilla tactics’ at sea: smugglers in daring comeback after crackdown on speedboat trade of frozen meat from Hong Kong to mainland China**

South China Morning Post



## **Frozen meat worth more than HK\$2 billion seized in anti-smuggling operation in Hong Kong**

- Haul found in container yard in Lok Ma Chau near mainland Chinese border and one suspected triad member arrested
- More than 200 containers packed with beef, pork, lamb and offal, shipped from various countries, including Germany, Chile and Australia



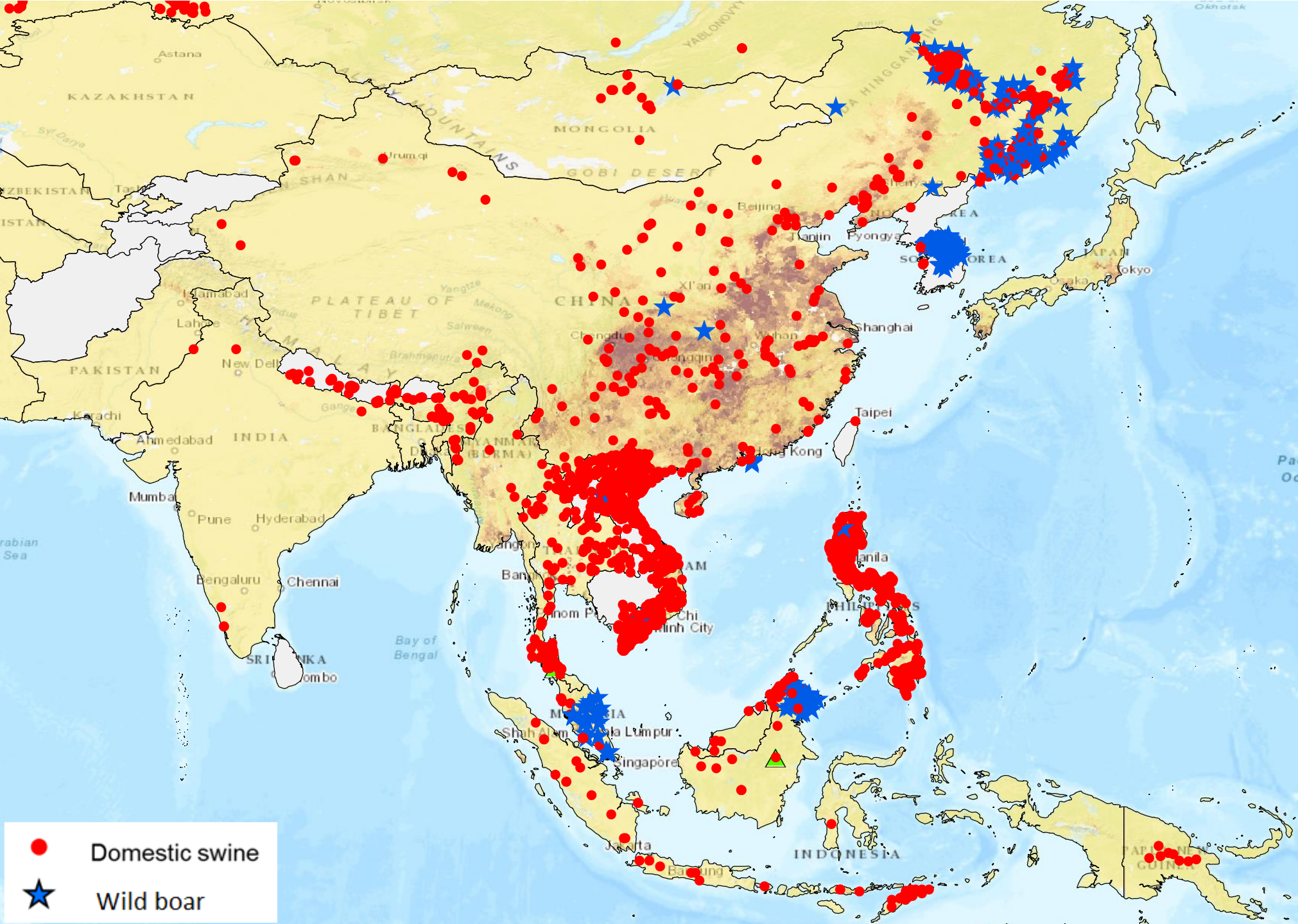
# Epidemiology of ASF in Asia



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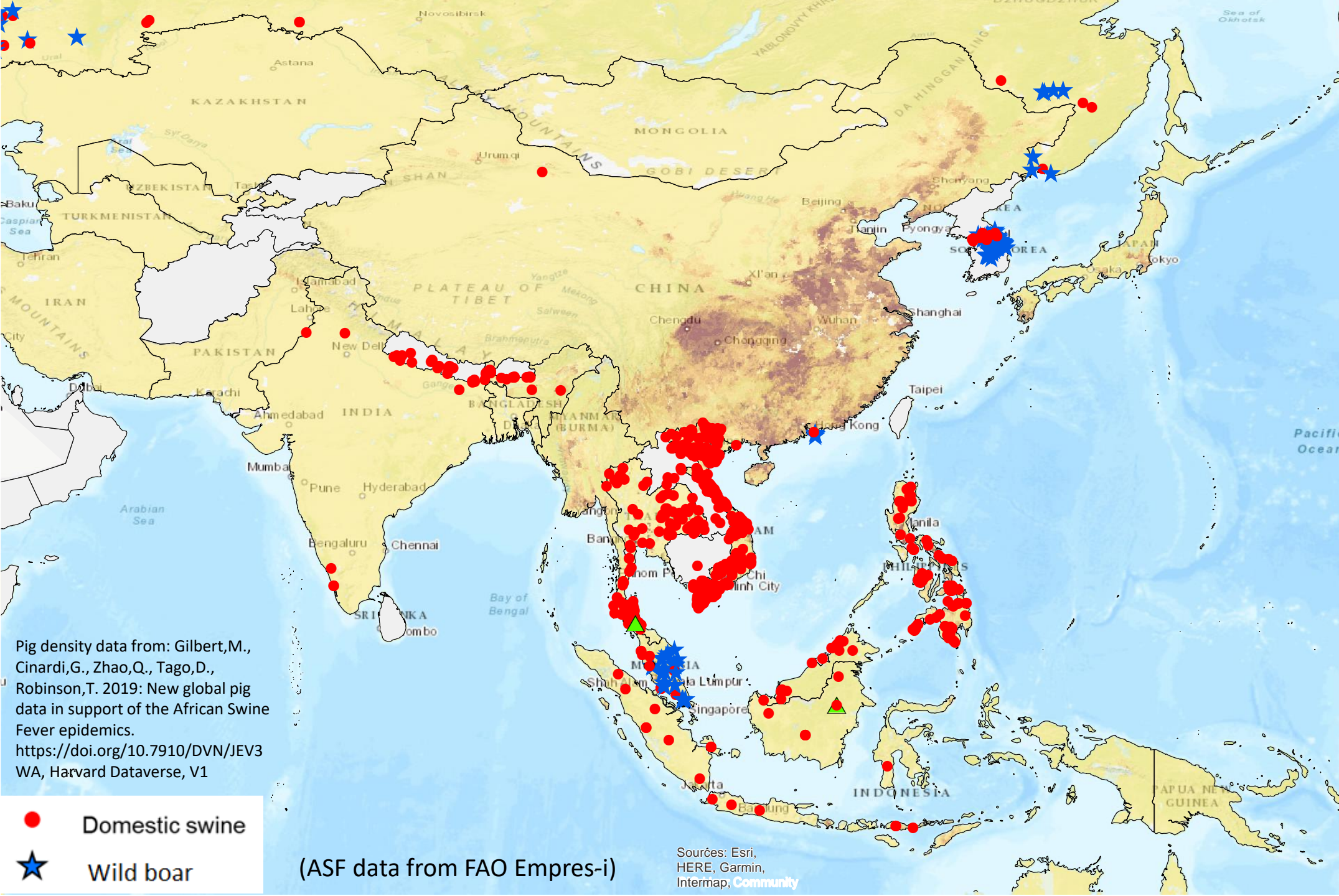


# Reported ASF Outbreaks since 2007

(ASF data from FAO EMPRES-i)

Pig density data from: Gilbert, M., Cinardi, G., Zhao, Q., Tago, D., Robinson, T. 2019: New global pig data in support of the African Swine Fever epidemics. <https://doi.org/10.7910/DVN/JEV3WA>, Harvard Dataverse, V1

- Domestic swine
- ★ Wild boar



Reported  
ASF  
Outbreaks  
from Jan  
2022 until  
March  
2023

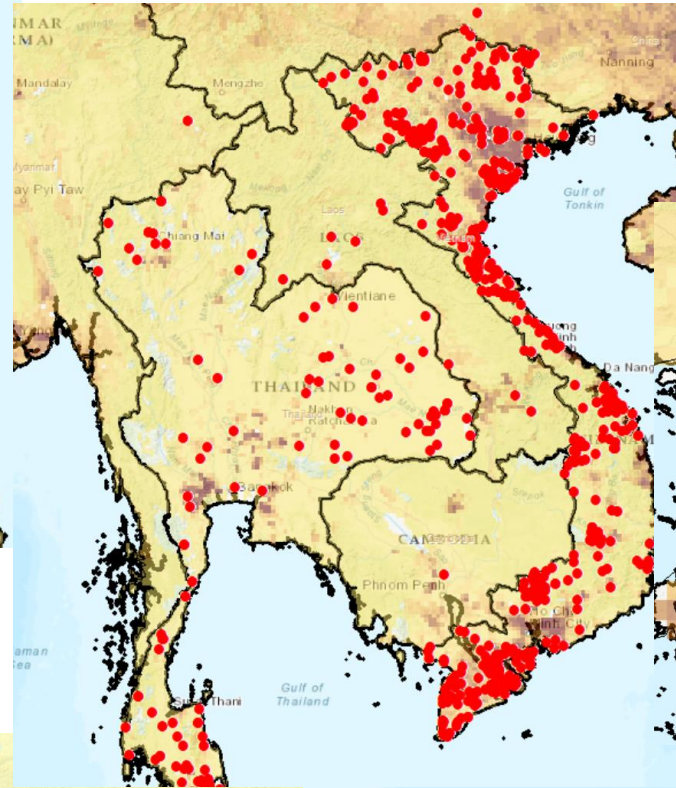
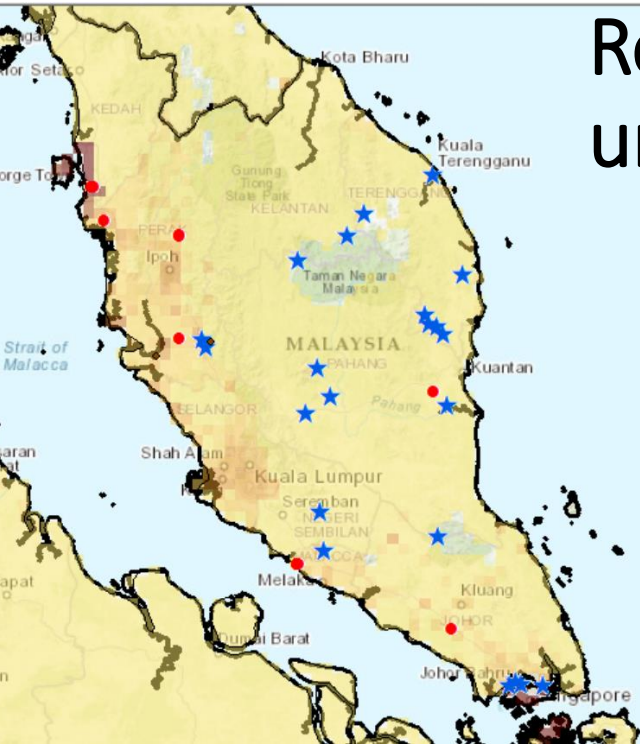
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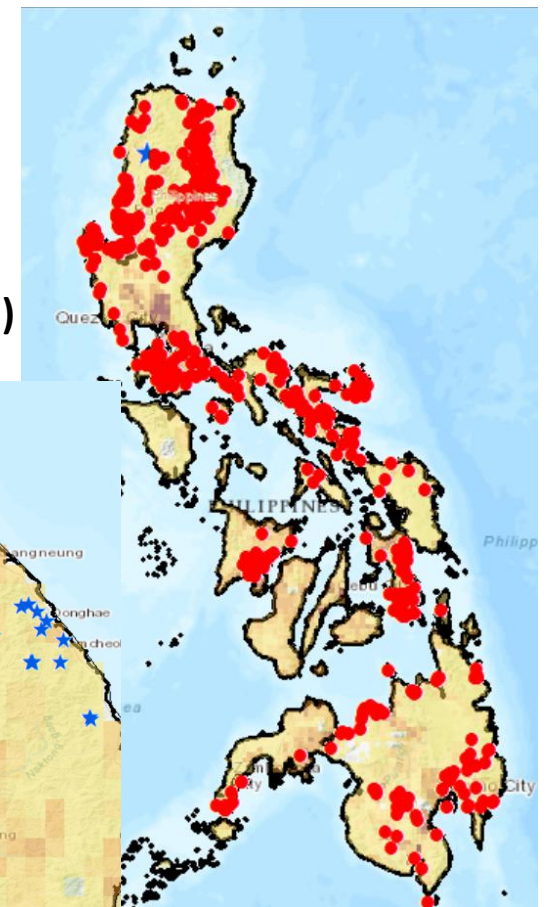
(ASF data from FAO EMPRES-i)

Sources: Esri, HERE, Garmin, Intermap, Community

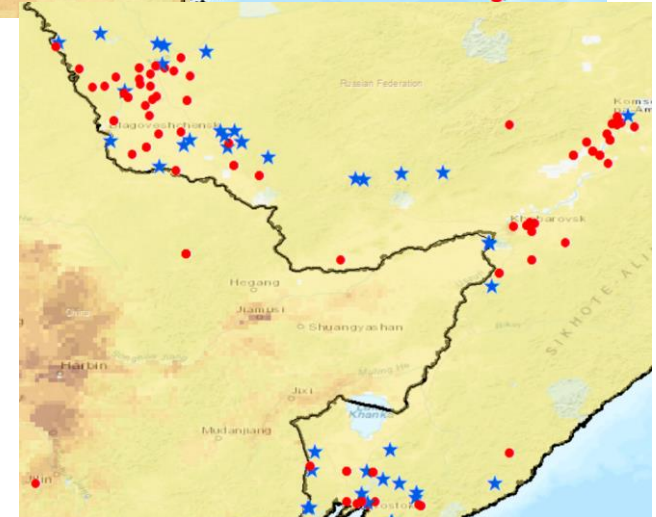
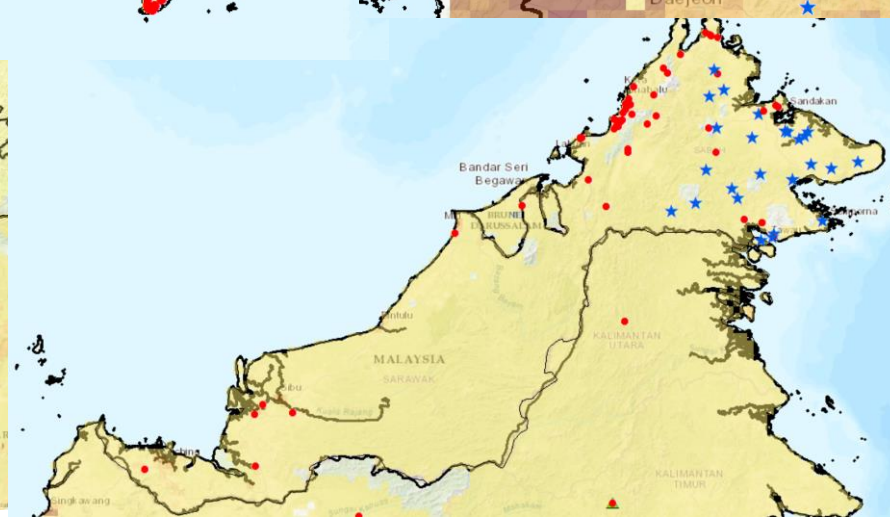
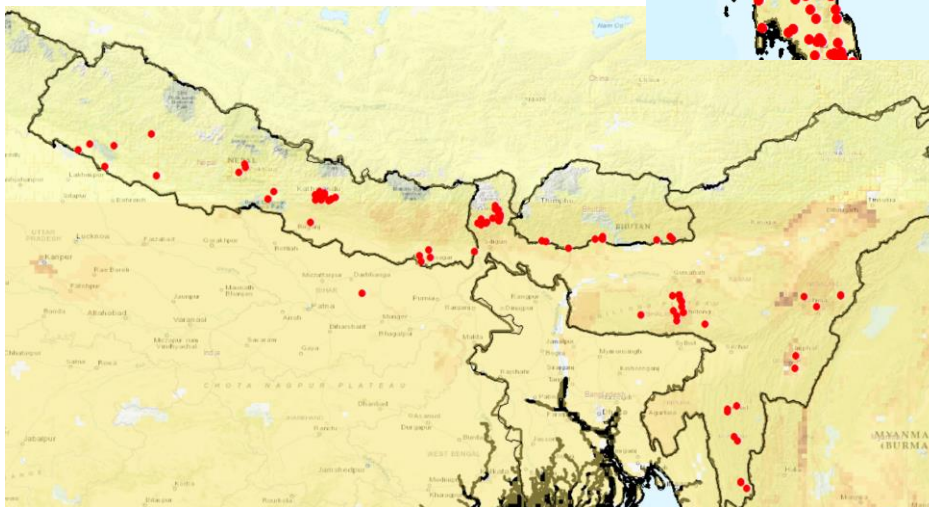
# Reported ASF Outbreaks from Jan 2021 until Mar 2023 for selected Areas



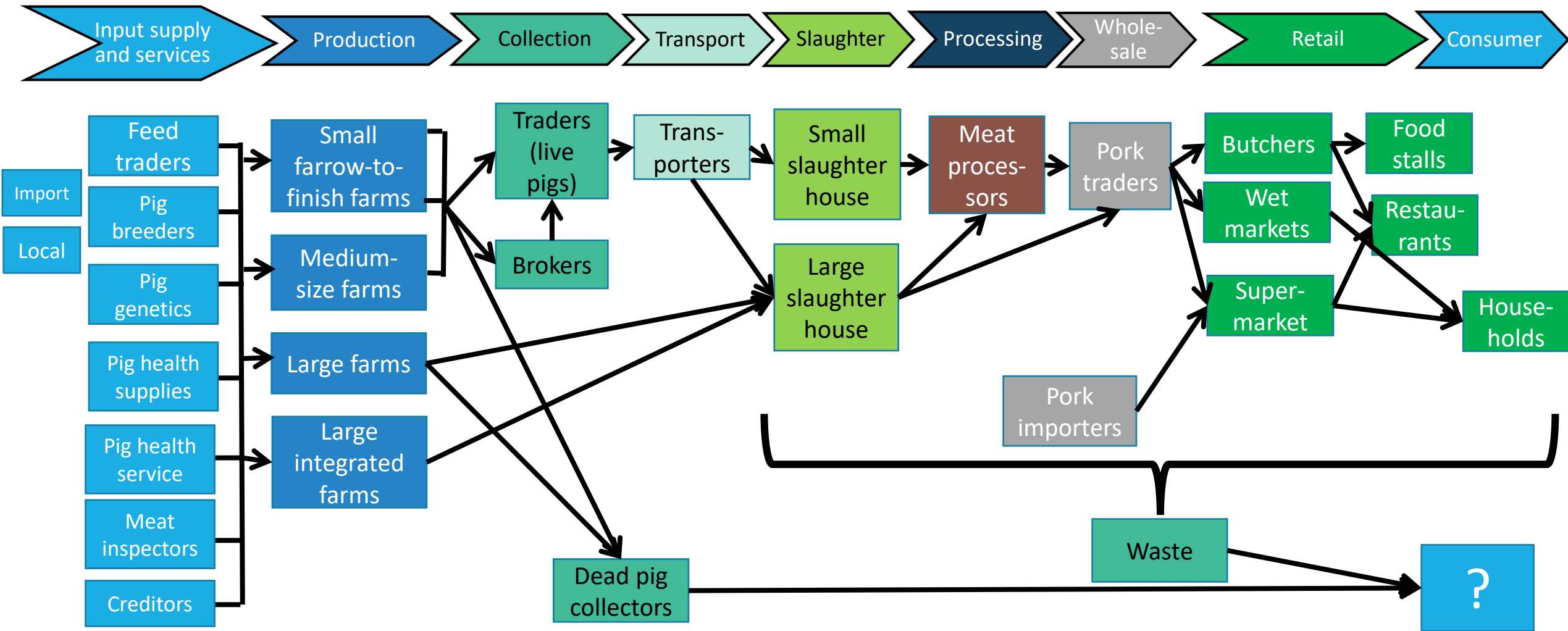
(ASF data from FAO EMPRES-i)



- Domestic swine
- ★ Wild boar



# Value Chain for Pork Food System



# Eco-social Impact of ASFV in Smallholder Systems

- often major losses of income to all stakeholders along pork value chain
  - due to disease and/or government control response
- response by producers
  - abandon pig production
  - change to other livestock (for example poultry or wild animal species)
  - use of illegal vaccines
  - selective culling based on PCR testing (more likely on large farms)



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# Emergence of New ASF Strains and Use of Unlicensed Vaccines

HEALTHCARE & PHARMA AUGUST 25, 2020

## China to probe labs, farms in crackdown on illegal African swine fever vaccines

[Emerging Microbes & Infections](#) >

Volume 10, 2021 - Issue 1




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3,927

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Original Article

## Genotype I African swine fever viruses emerged in domestic pigs in China and caused chronic infection

Encheng Sun, Lianyu Huang, Xianfeng Zhang, Jiwen Zhang, Dongdong Shen, Zhenjiang Zhang, ... show all

Pages 2183-2193 | Received 04 Aug 2021, Accepted 26 Oct 2021, Accepted author version posted online: 28 Oct 2021, Published online: 22 Nov 2021



 Download citation

 <https://doi.org/10.1080/22221751.2021.1999779>

 Check for updates

Research Paper | [Published: 26 February 2021](#)

## Emergence and prevalence of naturally occurring lower virulent African swine fever viruses in domestic pigs in China in 2020

[Encheng Sun](#), [Zhenjiang Zhang](#), [Zilong Wang](#), [Xijun He](#), [Xianfeng Zhang](#), [Lulu Wang](#), [Wenqing Wang](#), [Lianyu Huang](#), [Fei Xi](#), [Haoyue Huangfu](#), [Ghebremedhin Tsegay](#), [Hong Huo](#), [Jianhong Sun](#), [Zhijun Tian](#), [Wei Xia](#), [Xuewu Yu](#), [Fang Li](#), [Renqiang Liu](#), [Yuntao Guan](#), [Dongming Zhao](#)  & [Zhigao Bu](#) 

[Science China Life Sciences](#) **64**, 752–765 (2021) | [Cite this article](#)

**697** Accesses | **11** Citations | **15** Altmetric | [Metrics](#)

# Education for Better Risk Management of ASF in Asia



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# Key actions for ASF preparedness, response and recovery

## IEC materials

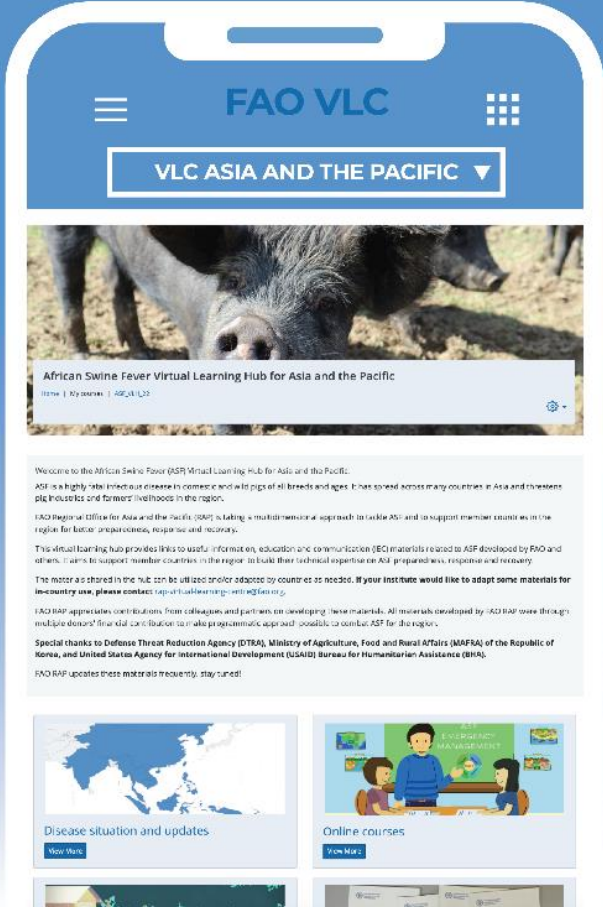
FAO RAP launched ASF resource hub under the VLC ([bit.ly/FAOASFvHUB](https://bit.ly/FAOASFvHUB))



Food and Agriculture Organization of the United Nations

**NOW AVAILABLE:**

**AFRICAN SWINE FEVER (ASF)  
VIRTUAL LEARNING HUB  
FOR ASIA AND THE PACIFIC**



# ASF Risk Management Guidelines for Smallholder Farms in Asia

Accessible via ASF virtual learning Hub and they are currently being translated into Spanish, French and Creole.



Guidelines for African swine fever (ASF) prevention and control in smallholder pig farming in Asia

## CULLING AND DISPOSAL OF PIGS IN AN ASF OUTBREAK



Guidelines for African swine fever (ASF) prevention and control in smallholder pig farming in Asia

## MONITORING AND SURVEILLANCE OF AFRICAN SWINE FEVER



Guidelines for African swine fever (ASF) prevention and control in smallholder pig farming in Asia

## FARM BIOSECURITY, SLAUGHTERING AND RESTOCKING



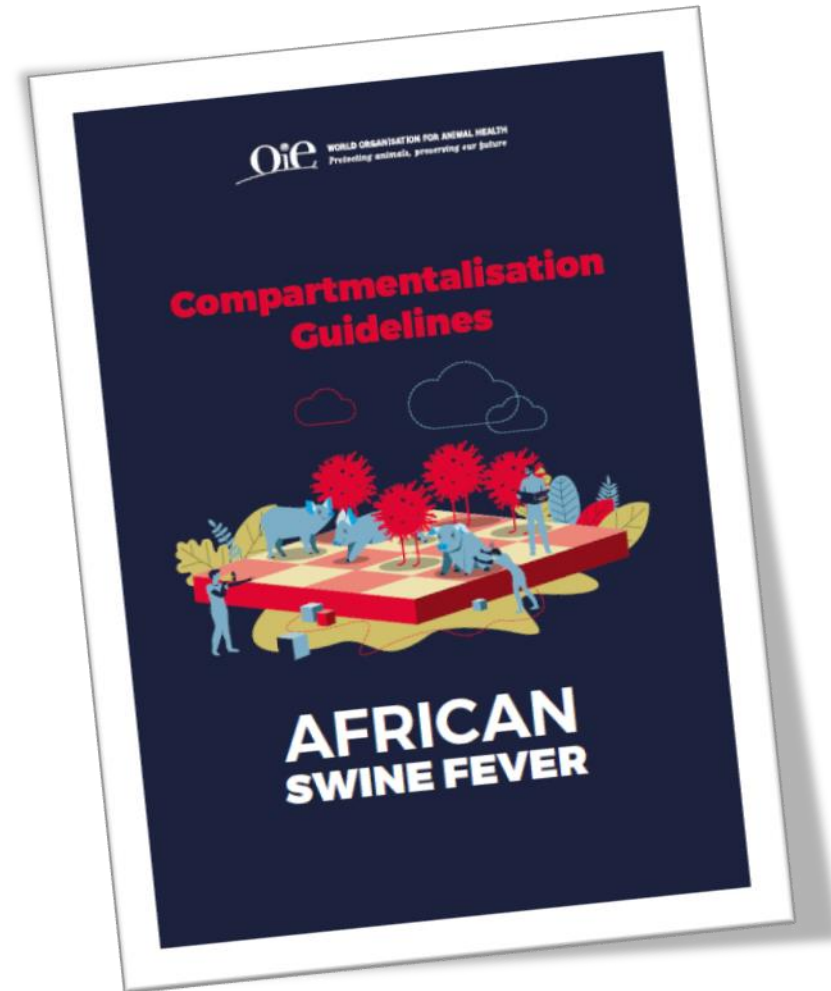
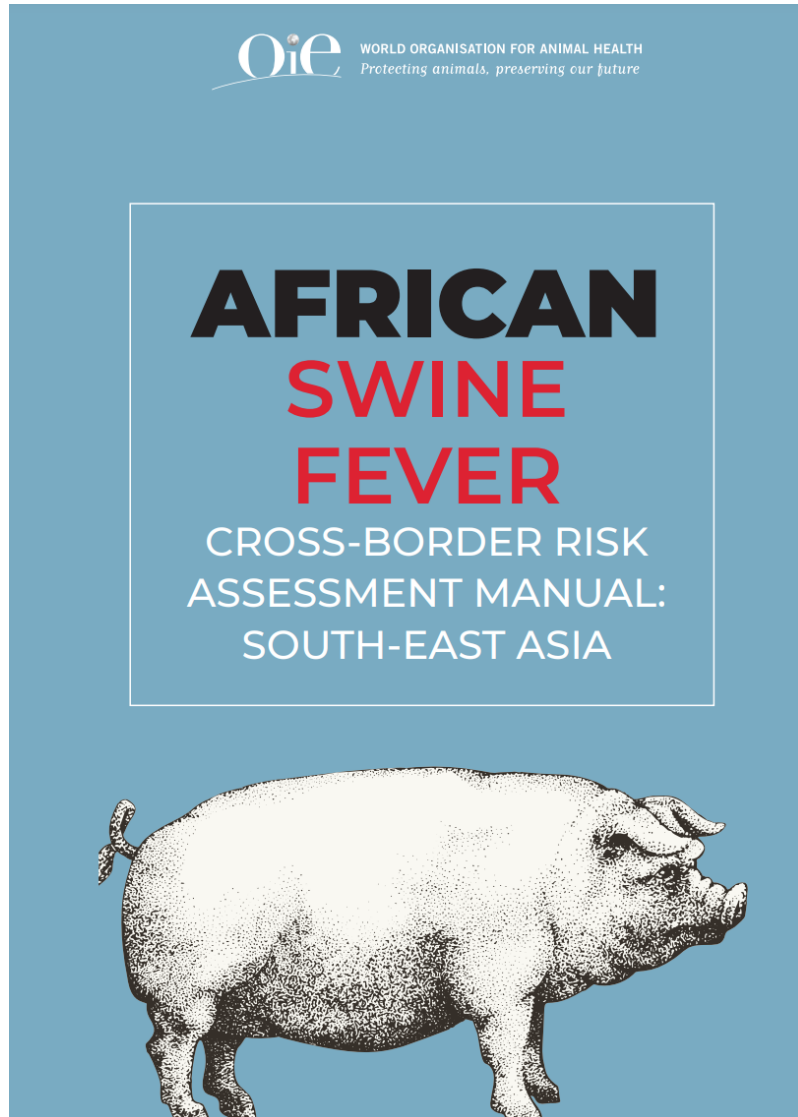
Guidelines for African swine fever (ASF) prevention and control in smallholder pig farming in Asia

## CLEAN CHAIN APPROACH FOR ASF IN SMALLHOLDER SETTING



# More Guidelines

<https://rr-asia.woah.org/en/news/oie-cityu-cross-border-african-swine-fever-risk/>



<https://www.woah.org/en/document/compartmentalisation-guidelines/>

# Issues



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# Issues

- ASFV eradication / elimination / endemicity
  - living with the virus?
- culling policies
  - effectiveness of within-herd selective culling?
- role of wild boar in different contexts
- vaccines (legal/illegal)
- changing clinical presentation, if so, why?
  - emergence of low virulence strains and/or spread of vaccine strains
- time from virus introduction to detection, suspicion, reporting, confirmation and action
  - normal background mortality
  - differential diagnoses
  - optimisation of processes



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# Conclusions



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# Conclusions

- ASFV introduced to Asia in 2018, and slowly became endemic in many countries in region
  - wherever there is pig production, ASFV will be introduced sooner or later
    - whether it becomes endemic depends on
      - local pork food system characteristics
      - ability of industry and government veterinary service to contain/eradicate
- pig industry rapidly intensifying in some countries
  - what are the risks, what are the benefits?
- need to develop strategies for living with ASFV
  - given current absence of evidence of feasibility to conduct epidemiologically effective large-scale vaccination campaigns
  - focus on
    - enhanced biosecurity across pork value chain
    - early detection of infection followed by epidemiologically and socio-economically sensible response

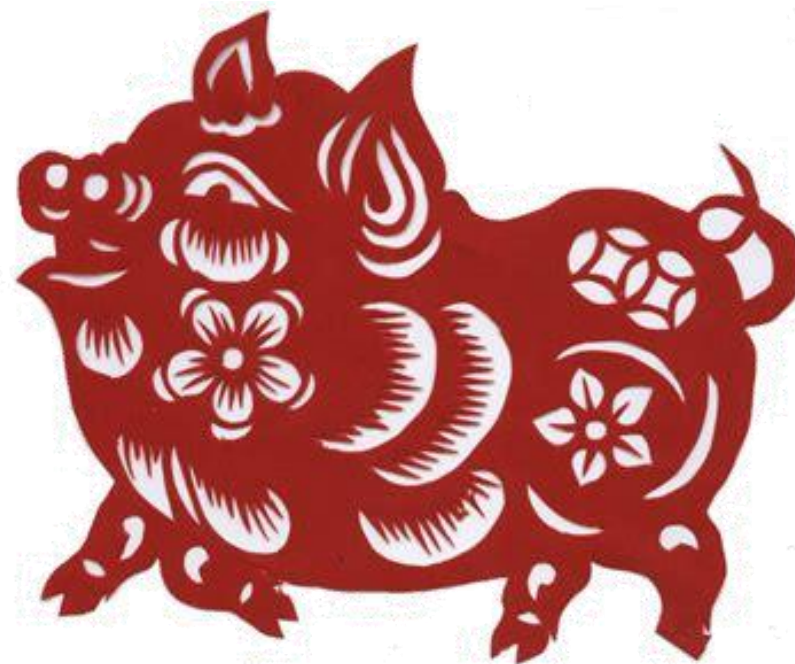


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# Thank You for Your Attention!



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