



Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS

# The economic burden of ASF over the last 17 years (2017-2023)



**Global consultation on African swine fever control**

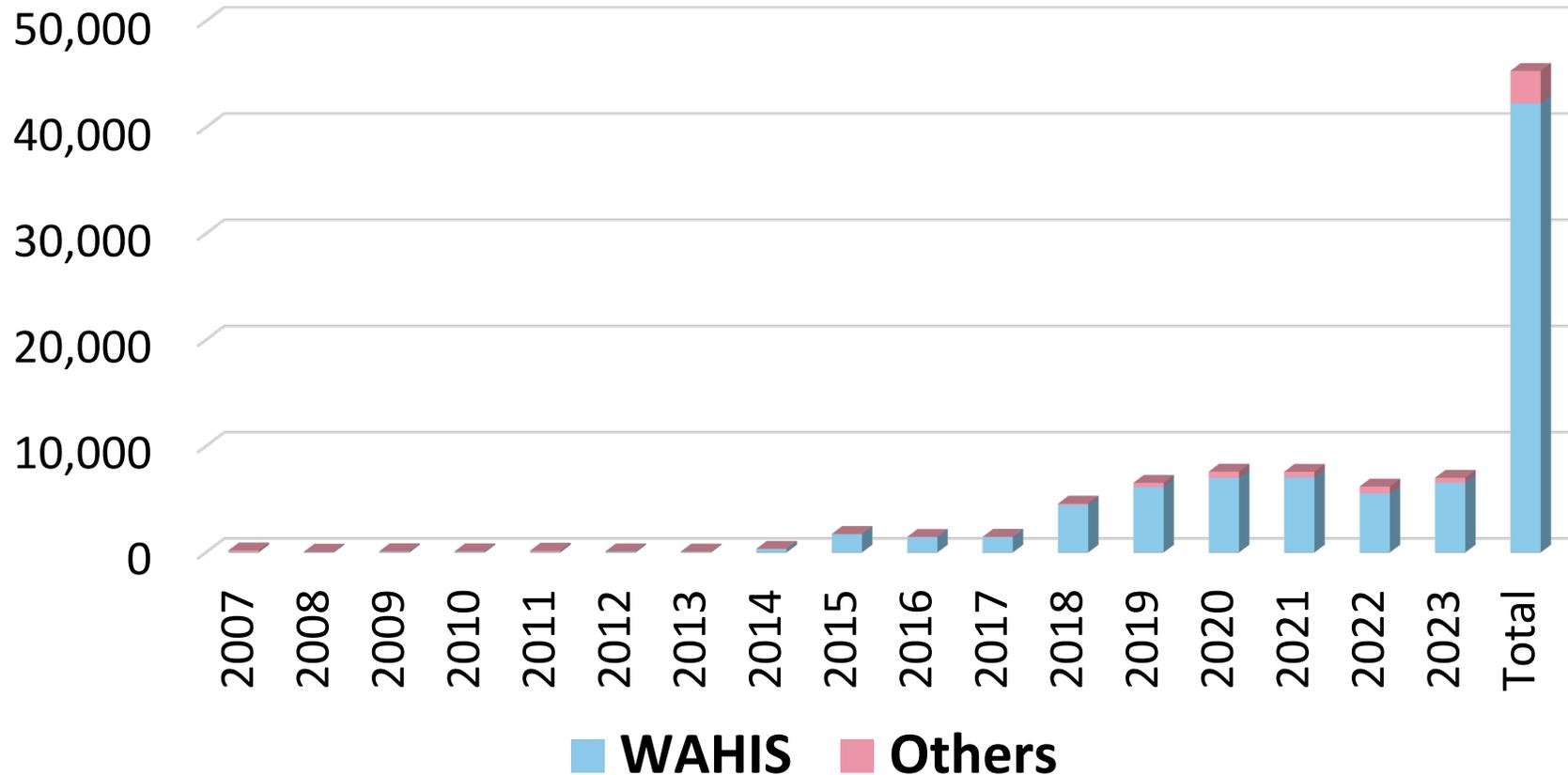
FAO-HQ, Rome (Italy) | 12-14 December 2023

## What did we do?

- *No global analysis have been conducted so far:*
  - *Try to estimate the direct costs associated with ASF at global level from Jan 2007 to Sep 2023*
- *Secondary data:*
  - *Address challenges of limited data*
  - *All official outbreak data was extracted from WAHIS system*
  - *Identify critical data gaps for a more comprehensive analysis*

# How “good” the available data is?

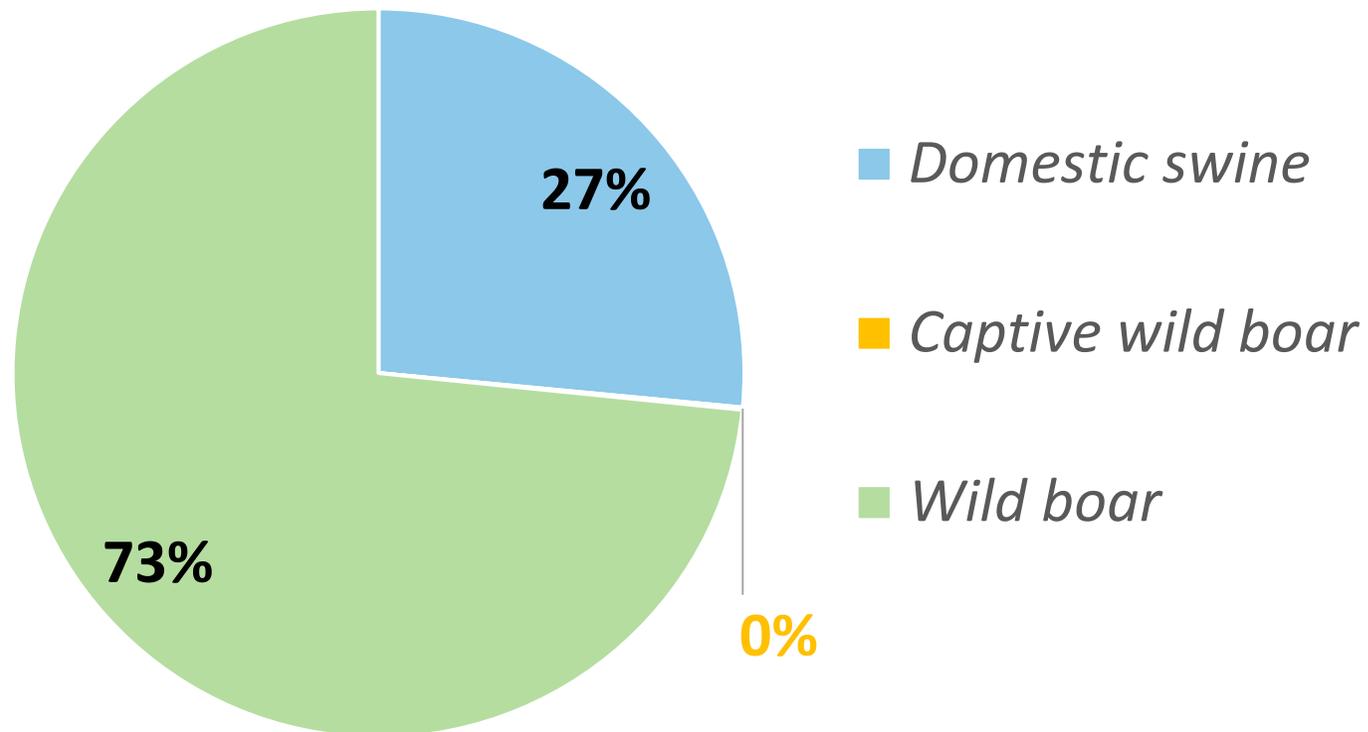
## *ASF outbreak notifications*



**+85%** of the outbreaks detected are captured by WAHIS

# ASF circulation in domestic vs wild pigs

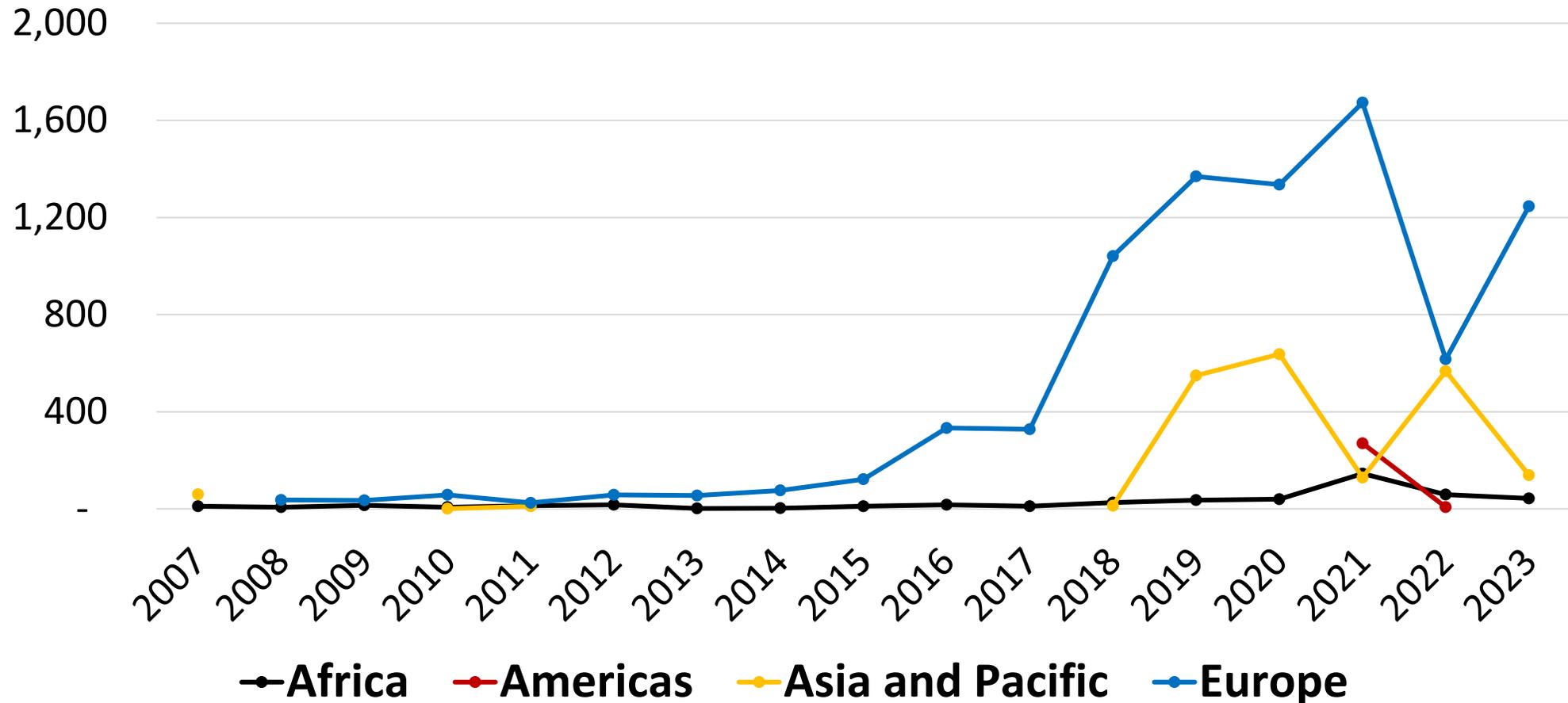
## *ASF outbreak notifications by type of pig*



**75%** of the ASF outbreak notifications in wild boars took place over the last 5 years

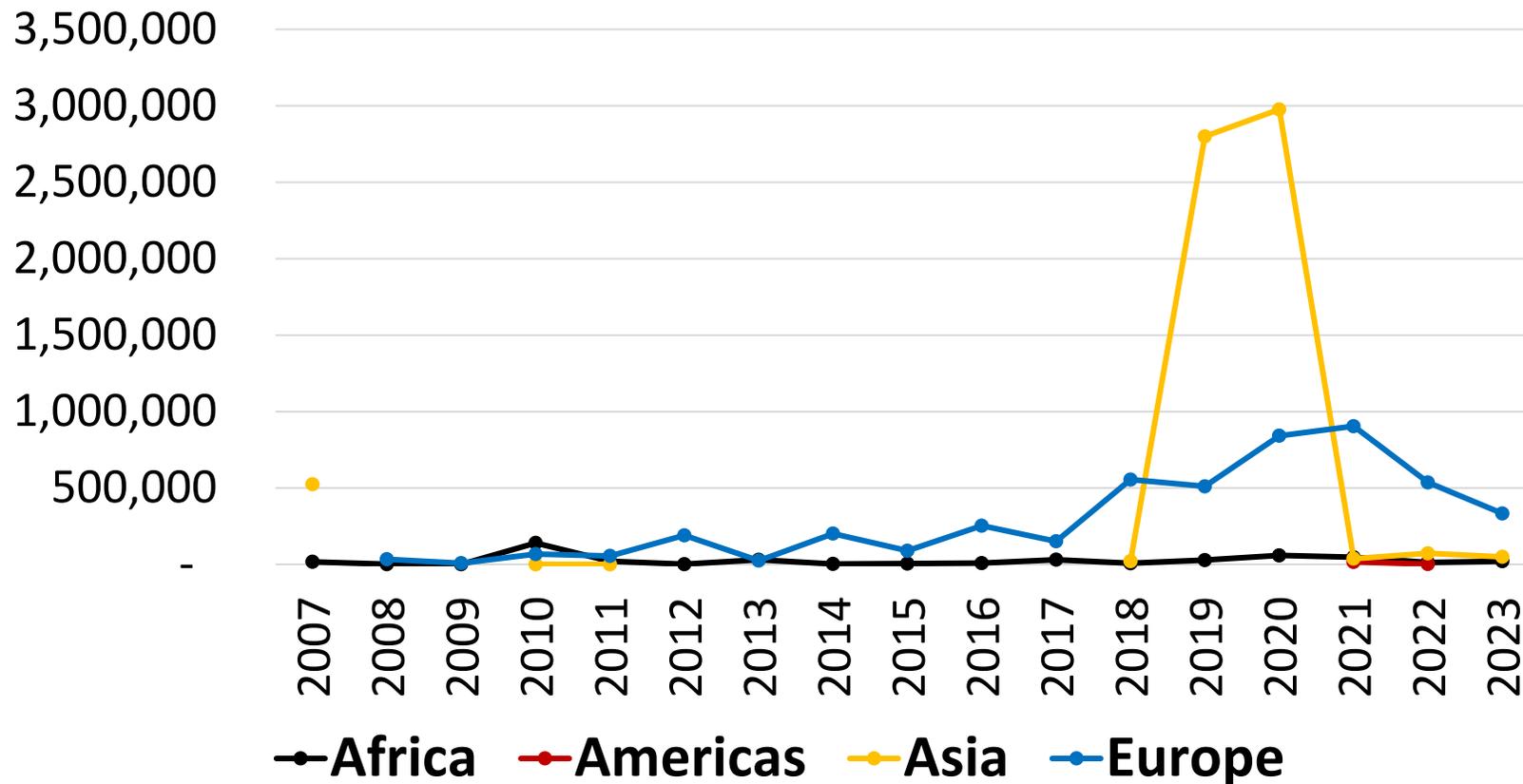
# ASF circulation in domestic pigs

*ASF outbreak notifications (domestic pigs) by region*



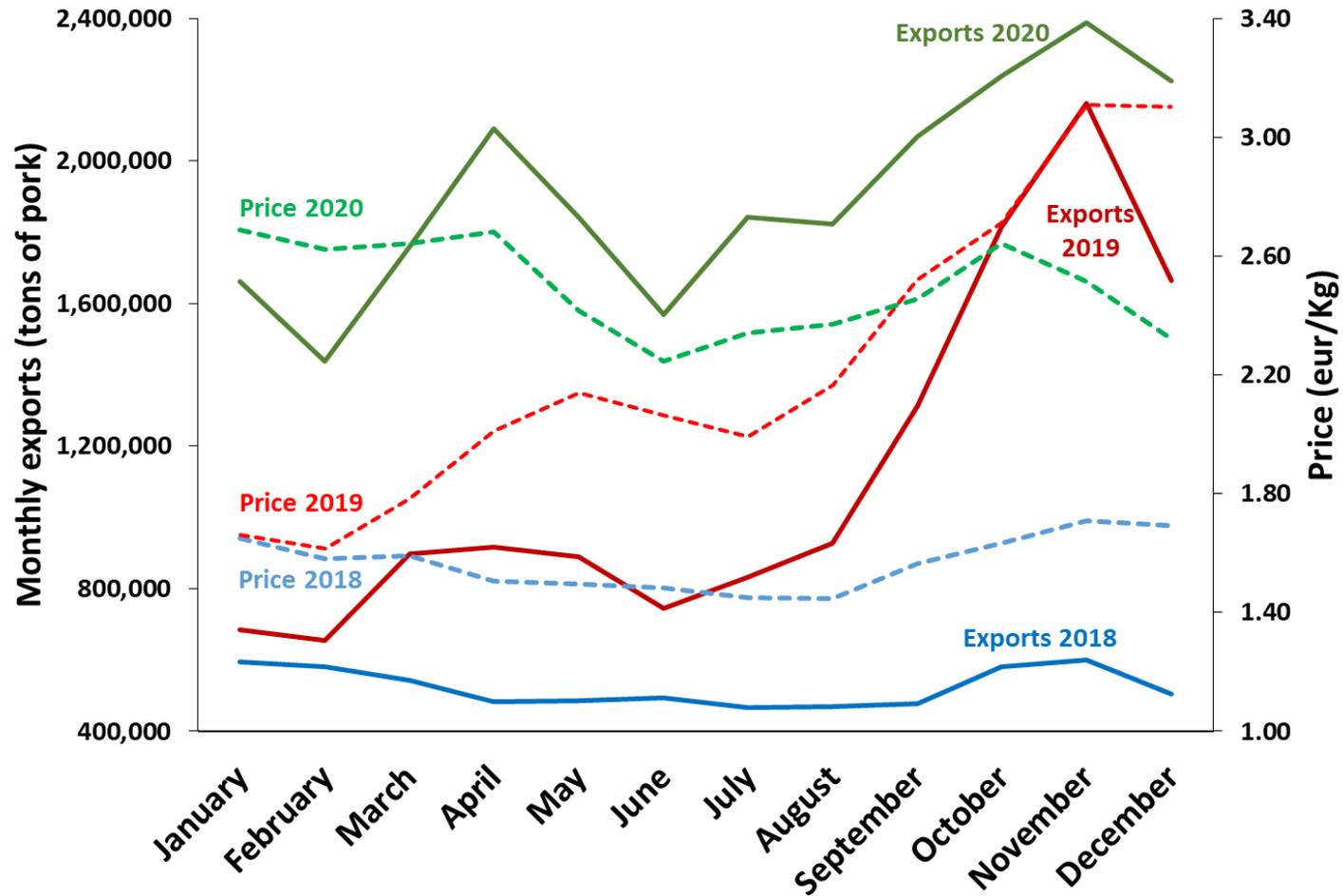
# ASF circulation in domestic pigs

## *Domestic pigs at risk due to ASF outbreaks*

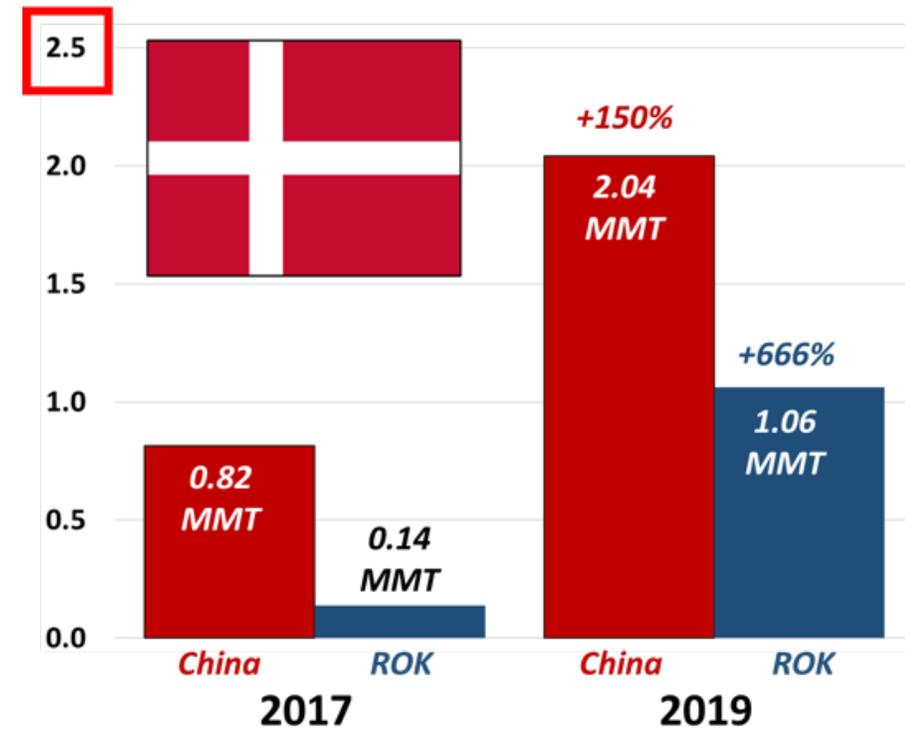


**+61%** of the pigs at risk due to ASF outbreaks were recorded between 2019 and 2020 due to the ASF explosion in Asia

## EU27 pork exports into China

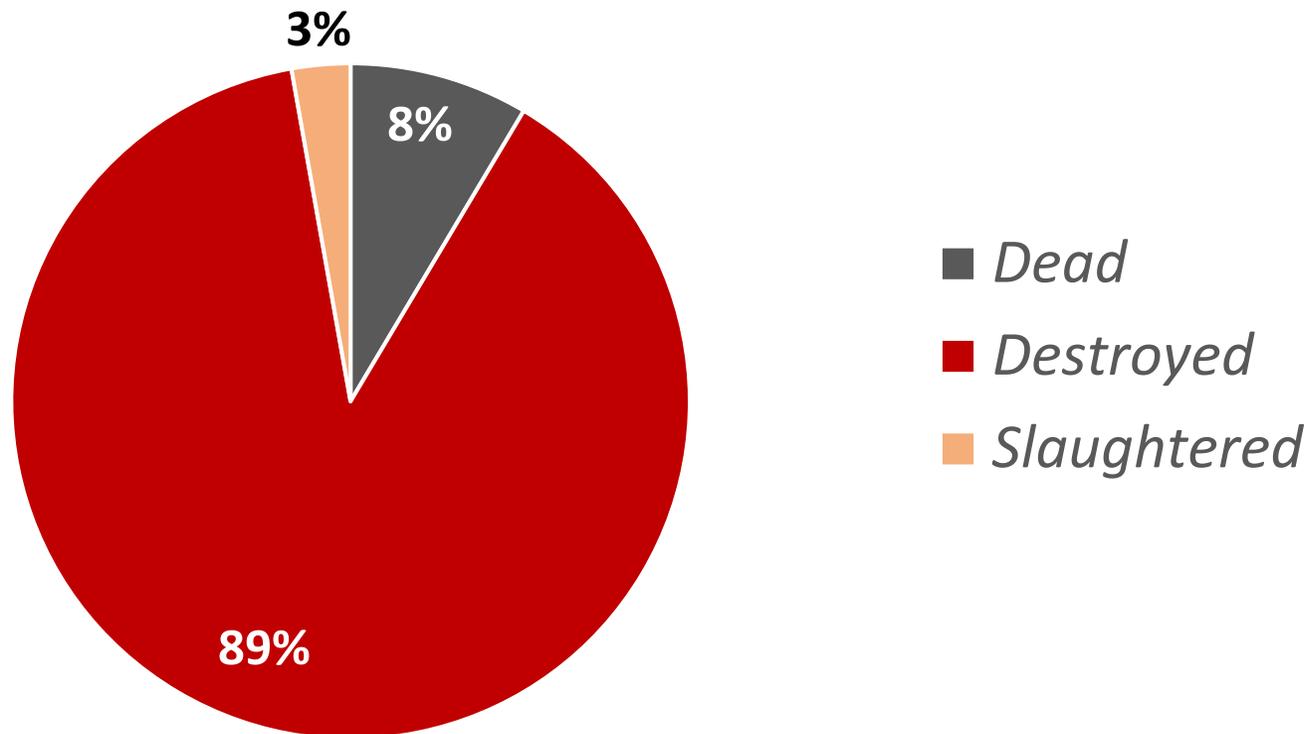


## Danish pork exports



# ASF losses in domestic pigs

*Domestic pigs lost due to ASF*



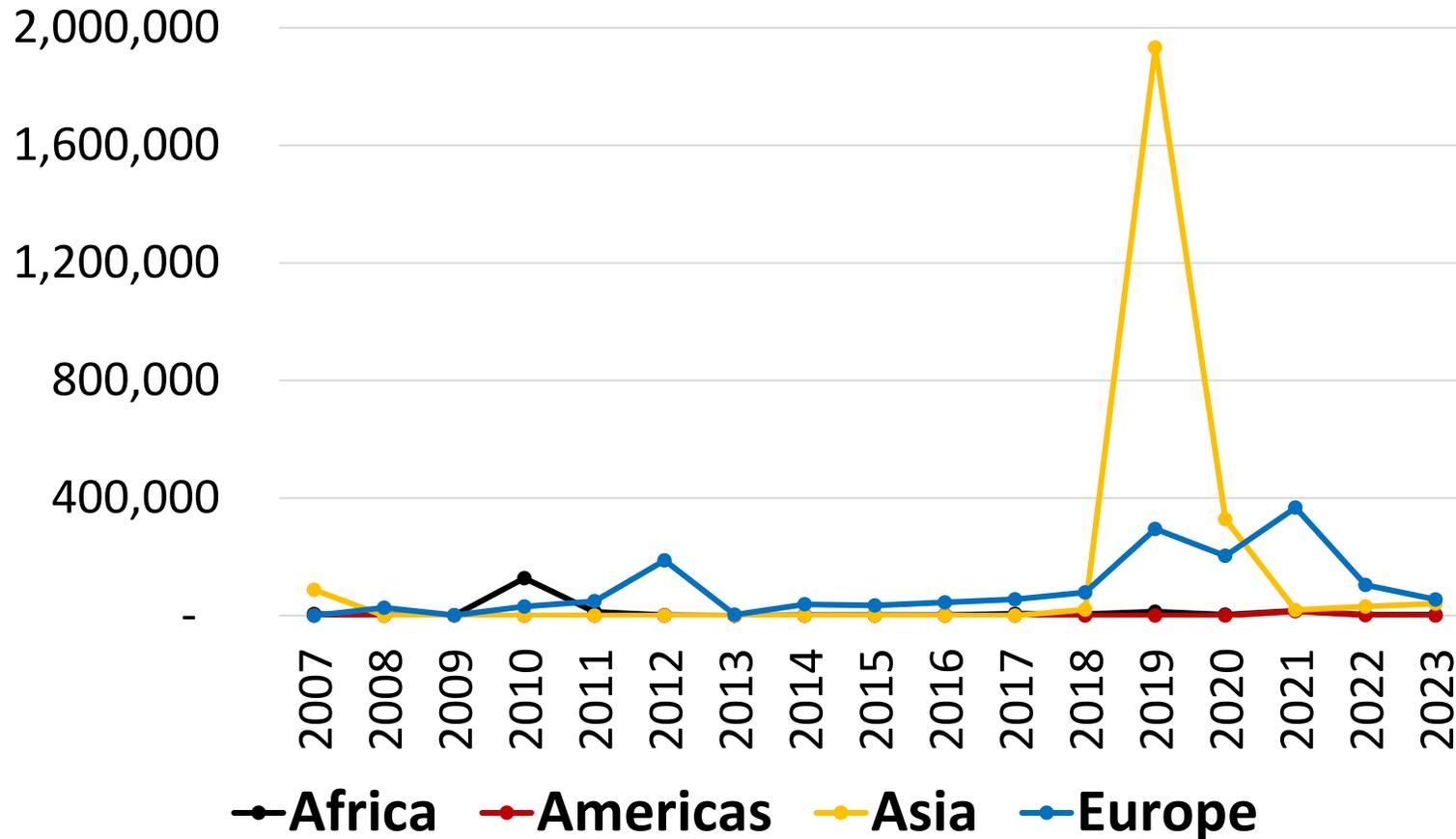
*Most of the pigs lost are due to sanitary measures (response)*

*Important interregional differences*

- Africa – 51%*
- Europe – 91%*

# ASF losses in domestic pigs

*Domestic pigs lost due to ASF outbreaks*



**2020 vs 2019**

- Pigs at risk: **+16%**
- Pigs lost: **-76%**

# Underreporting rates

Data-driven risk assessment of the incursion of African swine fever virus *via* pig products brought illegally into South Korea by travelers based on the temporal relationship between outbreaks in China

Dae-Sung Yoo<sup>1,2†</sup>, Ki-Hyun Cho<sup>3†</sup>, Seong-Keun Hong<sup>3</sup>,  
Hae-Eun Kang<sup>3</sup> and Jee-Yong Park<sup>3\*</sup>

<sup>1</sup>Veterinary Epidemiology Division, Animal and Plant Quarantine Agency, Gimcheon, Republic of Korea,

<sup>2</sup>College of Veterinary Medicine, Chonnam National University, Gwangju, Republic of Korea, <sup>3</sup>Foreign Animal Disease Division, Animal and Plant Quarantine Agency, Gimcheon, Republic of Korea

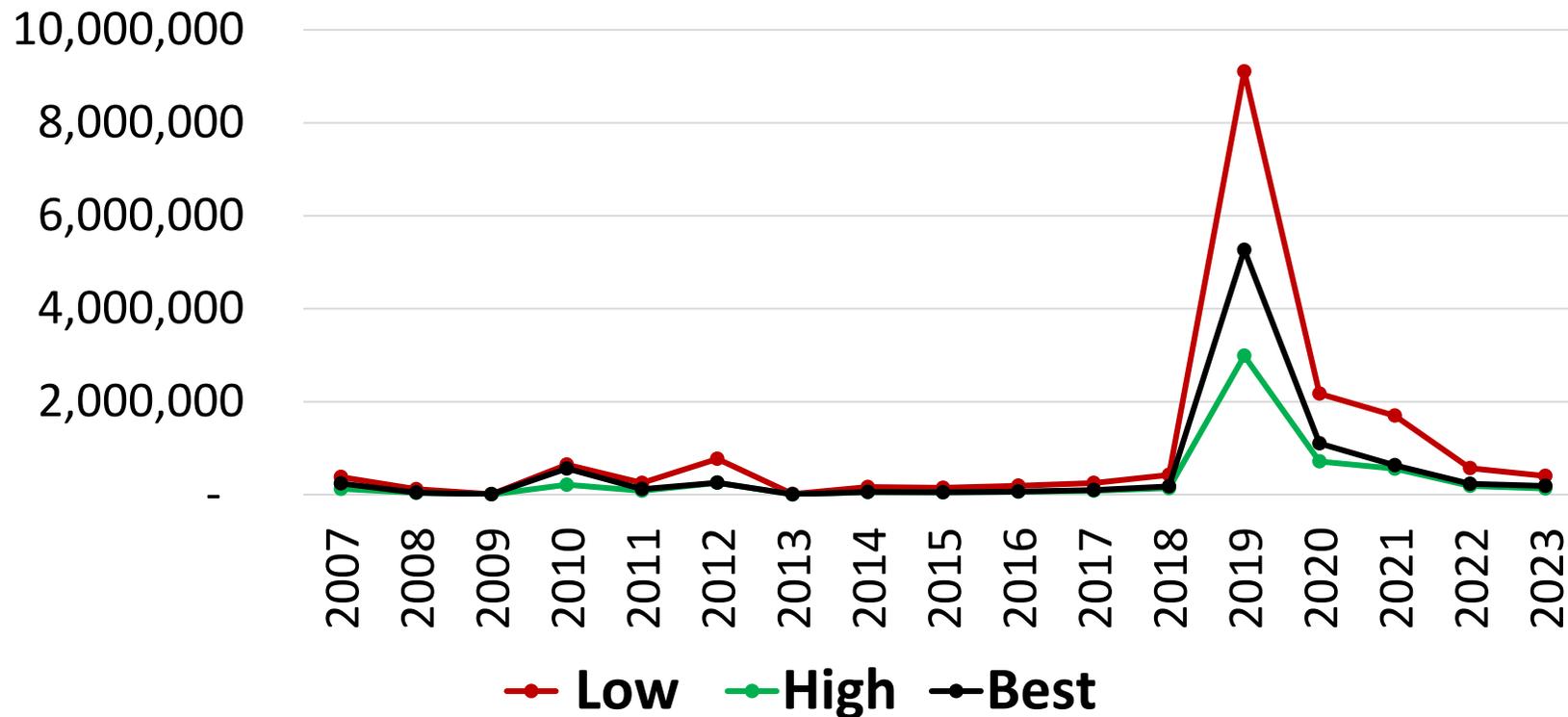
Based on Bayesian inference for the posterior distribution of the three parameters of the risk assessment model, the mean of the probability of notification of ASF,  $P_{notification}$ , was estimated to be 0.401 (95% highest density interval [HDI] = 0.246–0.556), the

## Reporting rate

25%	Africa (low)
56%	Americas
40%	Asia
75%	Europe (high)

# ASF losses in domestic pigs

*Pigs lost due to ASF under different reporting rates*



*Pigs lost due to ASF between **5.6** mill and **17.3** mill, depending on the reporting rate*

# Underreporting rates

ARTICLES

<https://doi.org/10.1038/s43016-021-00362-1>

nature  
food



## African swine fever outbreaks in China led to gross domestic product and economic losses

Shibing You<sup>1</sup>✉, Tingyi Liu<sup>1</sup>, Miao Zhang<sup>1</sup>, Xue Zhao<sup>2</sup>, Yizhe Dong<sup>3</sup>✉, Bi Wu<sup>4</sup>, Yanzhen Wang<sup>2</sup>, Juan Li<sup>5</sup>, Xinjie Wei<sup>5</sup> and Baofeng Shi<sup>2</sup>✉

pandemic. According to official data, by mid-2019, 13,355 pigs had died due to the ASF virus infection, and 1,204,281 pigs had been culled to halt the virus's spread. The epidemic has caused consid-

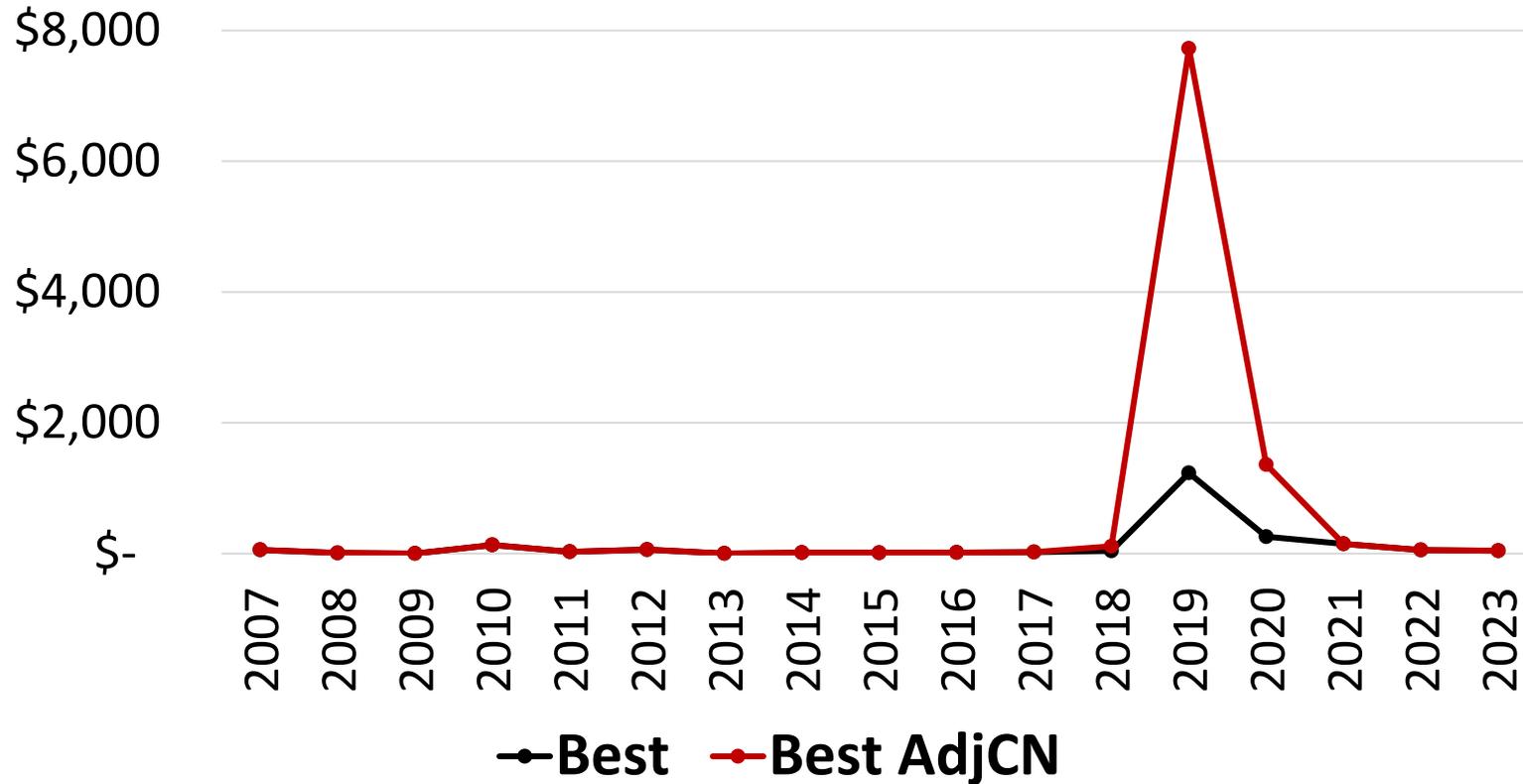
We estimate that 43.46 million pigs died either due to ASF virus infection, being culled to stamp out the virus or as a consequence of other ASF-related impacts during the first year of the ASF out-

*Official figures reflect ~2.5% of the actual number of pigs lost due to ASF*

*We assume that pigs that are not officially reported have a recovery value of 50% market price*

# Direct cost per pig lost

## Direct economic losses in domestic pigs due to ASF (million USD)



### Direct cost per pig lost

OutCost (VN) 234 USD

OutCost (PH) 281 USD

Fasina et al (2011) [188,377] USD

You et al (2021) 298 USD

### Direct global cost

- Best scenario: **2.1** bill USD (125 mill USD per year)
- Best AdjCN: **9.7** bill USD

# Thanks



*Protecting people, animals, and the environment every day*