

# Return of the African Swine Fever Eurasian Epidemic in the XXIst century

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ASF is a lethal viral disease of pigs, causing huge economic losses and threatening pork supplies worldwide. This review aims to provide an overview on current ASF knowledge and its spread throughout history, focusing on the recent outbreaks in Eurasia

## African Swine Fever Virus

Large and complex DNA virus.

Highly persistent in the environment, specially in cold conditions.

Can be transmitted through blood, feces, urine, and pork products.

## Hosts of the ASFV



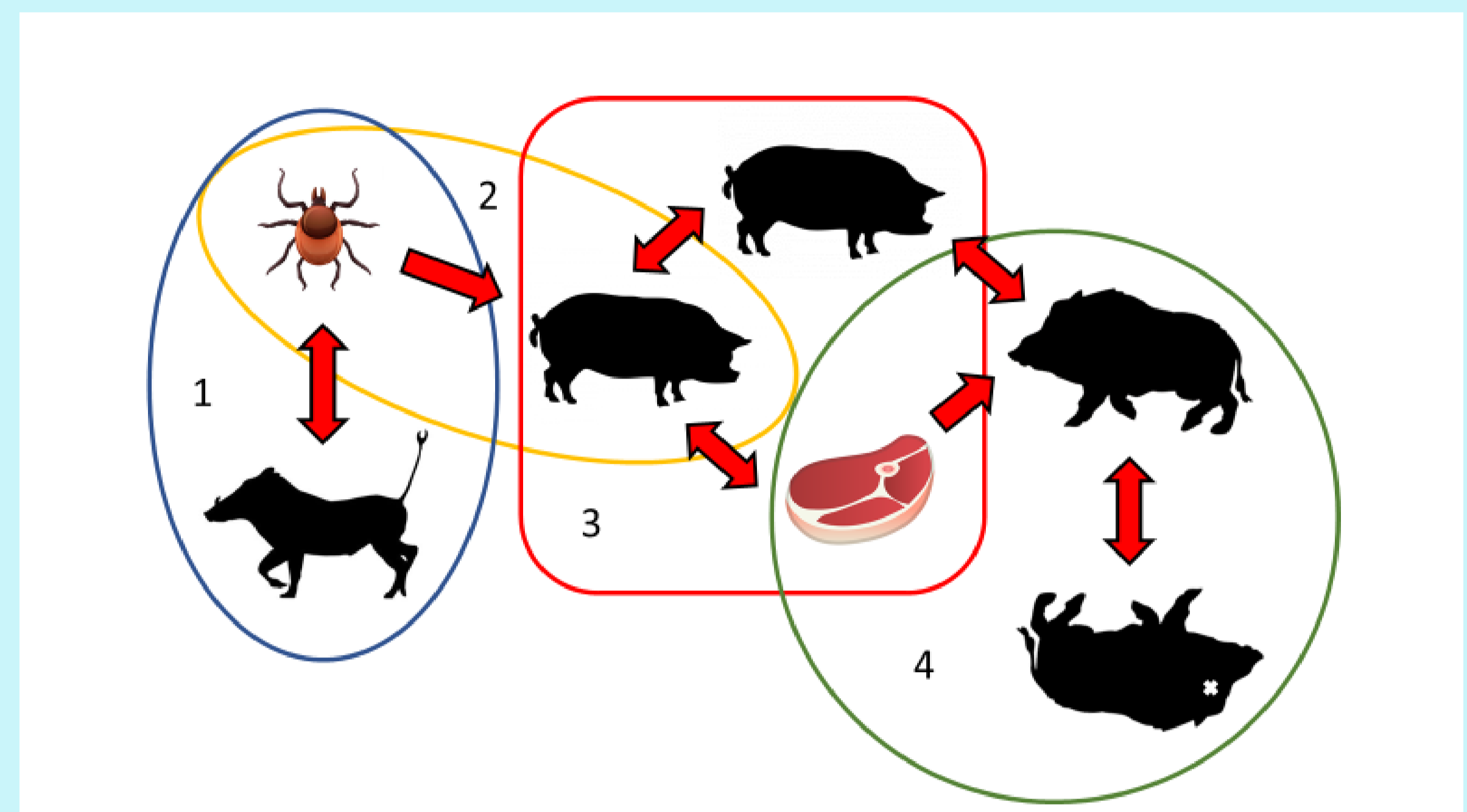
*Sus scrofa* (domestic & wild) **HIGHLY SUSCEPTIBLE**



*Ornithodoros* Ticks act as biological vectors

Wild African suids Resistant to ASF

## ASF Epidemiology



1. Sylvatic cycle; 2. Tick – Pig cycle; 3. Anthropogenic cycle; 4. Boar cycle

## Africa

First described in British settler's pigs (Kenya 1921)

Endemic in sub-Saharan region.



## Europe

1st outbreak → Portugal 1957

2nd outbreak → Portugal 1960

France Malta  
Belgium Netherlands  
Italy\*  
✓ eradicated 1993

Spain & Portugal  
✓ eradicated 1999

Caribbean & Brazil  
✓ eradicated 1984



## Current spread of Georgia 2007 ASFV

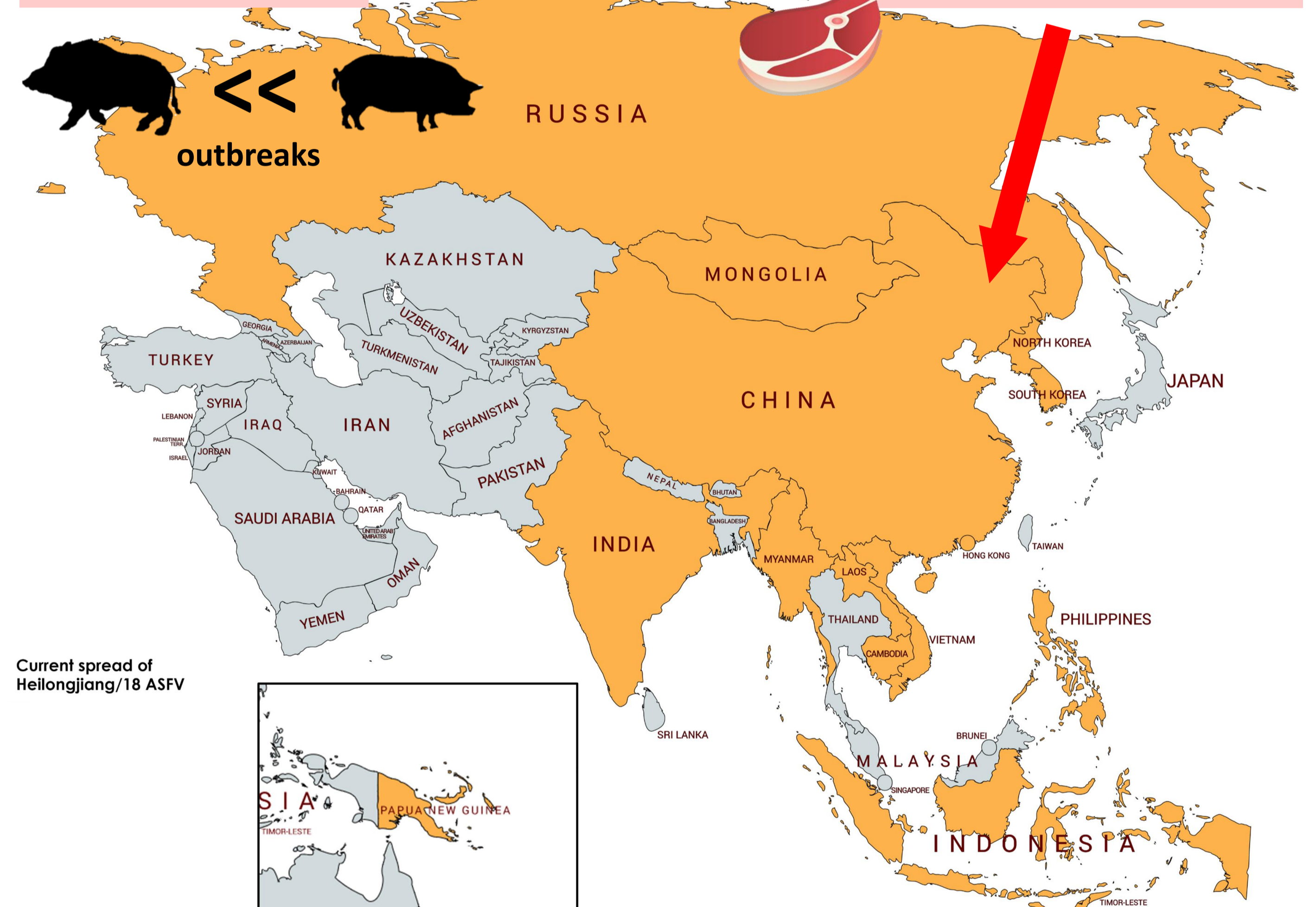
- ASF present
- ASF officially eradicated
- No data available

## 2007 – present



## 2018 - present

Origin: Eastern Europe



## Prevention

- Strengthen Biosecurity
- Strict regulation of animal and product movements
- Raise awareness

## Control

- Surveillance (early detection)
- Isolation of outbreak focus
- Eradication

- Culling of infected herds
- Intensive hunting & carcass removal

Currently **no available vaccine**, past attempts have proven unsafe or inefficient.

Major **breakthroughs in vaccination** made in recent times:

- **CRSA 2017**: heterologous protection
- **Madrid 2019**: oral vaccination of boar
- **USA 2019**: protection against European strain
- **China 2020**: protection against Asian strain, possible mass production
- **UK 2020**: vectorized DIVA vaccine

## Conclusions

ASF is proving **very difficult to eradicate**

70% of the world's swine population is held by affected countries

Over **7,000,000** pigs worldwide have already died due to ASF

Vaccination might be available in the short to medium term