Update on African swine fever (ASF)

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African swine fever (ASF)

• Large DNA virus, *Asfivirus*, sole member of *Asfarviridae*
• Unrelated to classical swine fever (CSF) although signs may be similar
• ASF is a contagious haemorrhagic viral disease of domestic & wild pigs
• Serious economic & production losses

ASF is listed as notifiable in the World Organisation for Animal Health (OIE) Terrestrial Animal Health Code & must therefore be reported to the OIE.
ASF transmission

• Transmission
  – Direct contact with infected domestic or wild pigs, live or dead
  – Indirect contact, through ingestion of contaminated material (e.g. food waste, feed or garbage containing pork products)
  – Contaminated fomites (e.g. shoes, clothes, vehicles, knives, equipment)
  – Biological vectors (soft ticks of the genus *Ornithodoros*)

https://www.sciencedirect.com/science/article/pii/B9780123751584000080
Clinical signs

• Various
  – High fever
  – Depression
  – Anorexia & loss of appetite
  – **Haemorrhages in skin** (redness on ears, abdomen, legs)
  – Abortion
  – Cyanosis
  – Vomiting diarrhea
  – Death within 6-13 days (up to 20 days)
  – **Mortality < 100%**
Diagnosis

- Suspect based on clinical signs
- Confirmation with laboratory tests (particularly to differentiate from CSF)
  - OIE Reference Laboratories for ASF: South Africa, Spain, UK
ASF outbreaks notified to the OIE since 2005 (cumulative)
Global situation of ASF

Jul - Dec 2019: current disease events shown
Regional situation of ASF

- China: **First ASF report in Asia on 3 August 2018**

- Since then, ASF confirmed in **many other countries**: Cambodia, Hong Kong, Korea (DPRK), Korea (ROK), Lao PDR, Mongolia, Myanmar, Philippines, Timor-Leste & Vietnam.

![ASF outbreaks since August 2018](image-url)
At least 60% of the world’s domestic pig population is concentrated in east and southeast Asia.

High impacts on economic losses and food security.
### Cumulative reported outbreaks & animal losses

<table>
<thead>
<tr>
<th>Country</th>
<th>Total outbreaks</th>
<th>Ongoing outbreaks</th>
<th>% administrative divisions affected</th>
<th>Total animal losses in previous update</th>
<th>Total animal losses in this update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>13</td>
<td>0</td>
<td>20 (5/25)</td>
<td>3 673</td>
<td>3 673</td>
</tr>
<tr>
<td>China (People’s Rep. of)</td>
<td>160</td>
<td>57</td>
<td>100 (31/31)</td>
<td>378 716</td>
<td>378 764</td>
</tr>
<tr>
<td>Hong Kong (SAR-PRC)</td>
<td>3</td>
<td>0</td>
<td>100 (1/1)</td>
<td>4 163</td>
<td>4 163</td>
</tr>
<tr>
<td>Korea (Dem. People’s Rep. of)</td>
<td>1</td>
<td>1</td>
<td>9 (1/11)</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Korea (Rep. of)</td>
<td>28</td>
<td>28</td>
<td>17 (3/18)</td>
<td>26 999</td>
<td>26 999</td>
</tr>
<tr>
<td>Laos</td>
<td>141</td>
<td>141</td>
<td>94 (17/18)</td>
<td>38 773</td>
<td>38 773</td>
</tr>
<tr>
<td>Mongolia</td>
<td>11</td>
<td>0</td>
<td>29 (6/21)</td>
<td>2 855</td>
<td>2 855</td>
</tr>
<tr>
<td>Myanmar</td>
<td>4</td>
<td>4</td>
<td>7 (1/15)</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Philippines</td>
<td>7</td>
<td>7</td>
<td>1 (1/83)</td>
<td>7 952</td>
<td>7 952</td>
</tr>
<tr>
<td>Russia*</td>
<td>59 (221)</td>
<td>16 (22)</td>
<td>4 (3/81)</td>
<td>2 674 (340 353)</td>
<td>2 731 (340 483)</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>100</td>
<td>100</td>
<td>100 (1/1)</td>
<td>405</td>
<td>405</td>
</tr>
<tr>
<td>Vietnam</td>
<td>6 083</td>
<td>6 083</td>
<td>100 (63/63)</td>
<td>3 796 025</td>
<td>3 796 025</td>
</tr>
<tr>
<td><strong>TOTAL ASIA</strong></td>
<td><strong>6,610</strong></td>
<td><strong>6,437</strong></td>
<td>-</td>
<td><strong>4,262,406</strong></td>
<td><strong>4,262,511</strong></td>
</tr>
</tbody>
</table>

*NOTE: the numbers in black correspond to the outbreaks reported in Russia within the Asian continent and their impact. The numbers in grey were calculated based on what was reported in the whole country.
Problems with control of ASF

- Not easy to differentiate from other swine diseases
- Virus is relatively stable and resistant so can survive long time in environment and contaminated pork products
- No effective treatment or vaccine
- No public health or food safety concerns
Prevention

- Early detection & biosecurity
- Border vigilance
- **Enhanced awareness** among stakeholders
  - Enhanced on-farm biosecurity measures
  - Enhanced national sanitary measures on waste disposal from aircrafts/vessels/passengers
- **Enhanced passive surveillance & immediate reporting**
Control

- Strict biosecurity & quarantine
- Movement control
- Culling
- Compensation

- OIE international standards for risk management of TADs to reduce the risk of exporting disease to trading partners
Challenges identified as specific for Asia proving that ASF control is “not one size fits all”

- Pig production and pig value chains are complex
  - Dense population of pigs in east and southeast Asia
  - Large numbers of small-scale pig farming with low biosecurity
  - Complex value chains that operate across national borders
  - Cultural practices around pig use and food consumption may create additional risk pathways
  - Globalisation has made it easy for people and products to travel rapidly and over long distances
### ASF Regional Collaborative Framework for Southeast and East Asia

**Objective:** To prevent the spread and mitigate the impacts of ASF in SE Asia (and E Asia)

<table>
<thead>
<tr>
<th></th>
<th>Better understanding of ASF</th>
<th>Enhanced risk-based strategy and implementation for ASF prevention and control</th>
<th>Strengthened policy and enabling environment</th>
<th>Enhanced risk communication and policy advocacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Research gaps and priorities</td>
<td>Surveillance • Risk assessment • Risk mitigations in immediate, medium and longer terms</td>
<td>Human and financial resources to respond to ASF • Legislations and regulatory frameworks</td>
<td>Communication and advocacy strategies for specific stakeholders • Enhanced veterinary services’ communication • Policy advocacy</td>
</tr>
<tr>
<td>2</td>
<td>Operational research to support evidence based planning and decisions such as value chain mapping</td>
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<td>3</td>
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</table>

### Developed required capacity

**Technical capacity:** Laboratory Field investigation and response  
**Operational capacity:** Emergency preparedness

### Enhanced collaboration and coordination

Multi-sectoral - Public-private partnerships, inter-ministries, academia,  
Multi-lateral – subregional, regional, global, interregional  
Multi-disciplinary approach – research networks
African Swine Fever Emergency Preparedness and Response in Asia

- Evidence-based planning for longer term ASF prevention & control
- Operational research to better understand ASF for efficient outbreak containment
- Capacities & regional networks established to detect, control and prevent ASF are enhanced
- Emergency management missions
Standing Group of Experts on ASF for Asia

• Enhance cooperation and information sharing between Asia and Europe on ASF
• Improve understanding of ASF, how it may evolve & short-/long-term impacts
• To facilitate coordination of ASF-related activities, FAO & OIE are working with members & other partners using GF-TADs mechanism

• Priority topics
  – ASF epidemiology, including risk-based surveillance
  – Biosecurity
  – Border control measures
  – ASF risk communication
Global Initiative

• Technical Item at the 87th OIE General Session (May 2019)
  Strategic challenges to global control of African Swine Fever

- Jointly presented by FAO/OIE
- Outline
  • Global ASF situation
  • Socio-economic impact
  • Key epidemiological features & strategic control challenges
  • Regional Initiatives
  • Global Initiative
Gaps to be addressed

• Strengthening of National Veterinary Services
• Support evidence-based planning & application of capacities at field level
• Development & availability of effective, potent & safe vaccine
• Development of reliable diagnostic tools, including rapid field DIVA test
Key points

• Due to possible global socio-economic impacts, the ASF control requires shared responsibility
  – Political and technical commitment, transparency and sharing information (including timely notification)

• ASF situation in Asia is still evolving and expected to continue to spread due to complexity and diversified production systems and value chains
OIE communication campaign

https://trello-attachments.s3.amazonaws.com/5c501da3a4ba4c2c50ce308d/5c501143fa345d25635e2f/3ece/76b39e133207256444fd4/EN_GIF_CommercialPigFarms.mp4
Awareness materials in OIE Members

- **Australia**
- **China, P.R.**
- **Korea, R.O.**
- **Thailand**
- **Japan**
Other ASF information & activities

• Standing Group of Experts on ASF for Asia
• OIE Terrestrial Animal Health Code
  – Establishing a country, zone & compartment free of ASF
  – Recommendations relating to trade of pork & pork products
• OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
• ASF-related webinars
• Other resources are available online at OIE regional website
AFRICAN SWINE FEVER
Don’t be the carrier of a deadly pig disease