

# Swine Disease Global Surveillance Report

Worldwide pork production is highly interconnected by trade between countries and markets which could increase the risk of introduction of foreign pathogens into the US.

## PROJECT

The aim of these reports is to have a system for near real-time identification of hazards that will contribute to the mission of assessing risks to the industry and ultimately, facilitate early detection and identification, or prevent occurrence of events, in partnership with official agencies, and with our international network of collaborators.

Monthly reports are created based on the systematic screening of multiple official data sources, such as government and international organization websites, and soft data sources like blogs, newspapers, and unstructured electronic information from around the world, that then are curated to build a raw repository. Afterward, a group of experts uses a multi-criteria rubric to score each event, based on novelty, potential direct and indirect financial impacts on the US market, credibility, scale and speed of the outbreak, connectedness, and local capacity to respond average is calculated. The output of the rubric is a final single score for each event which then it is published including an epidemiological interpretation of the context of the event.

*These communications and the information contained therein are for general informational and educational purposes only and are not to be construed as recommending or advocating a specific course of action.*



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## Swine Disease Global Surveillance Report

Tuesday, March 2, 2020 – Monday, April 6, 2020

### Report Highlights

- **SARS-CoV-2 infectivity:** experimental results from the Friedrich Loeffler-Institut (FLI) show pigs are not susceptible to the virus responsible for COVID-19.
- **Poland:** first two outbreaks of ASF in commercial pig farms in Western Poland - over 33,000 pigs in the affected farm. ASF detected in wild boar 10 km from the German border.
- **Papua New Guinea:** authorities confirmed the first ASF outbreak in Southern Highlands province - Australian swine industry on high alert.
- **Indonesia:** more than 8,000 affected animals in Bali - authorities suspect ASF.
- **Compartmentalization - Report review:** Business Continuity in the Face of African swine fever - Compartmentalization strategy

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### SARS-CoV-2

#### Europe Germany

##### *Can SARS-CoV-2 infect pigs?*

The German research institute, Friedrich Loeffler-Institut, has released a press communication with preliminary results of infection studies that show that pigs are not susceptible to the virus.

In the experimental studies, researchers inoculated the animals nasally with SARS-CoV-2 to mimic the natural route of infection. They examined whether the animals become infected, the pathogen replicates and the animals show symptoms of the disease. It was also tested whether they excrete the pathogen.

**Initial results indicated that fruit bats and ferrets can become infected, whereas pigs and chickens cannot.** The susceptibility of ferrets, in particular, is an important finding, as they could be used as model animals for human infection to test vaccines or drugs.

Final results are expected in May - Further information is available in [LINK](#)

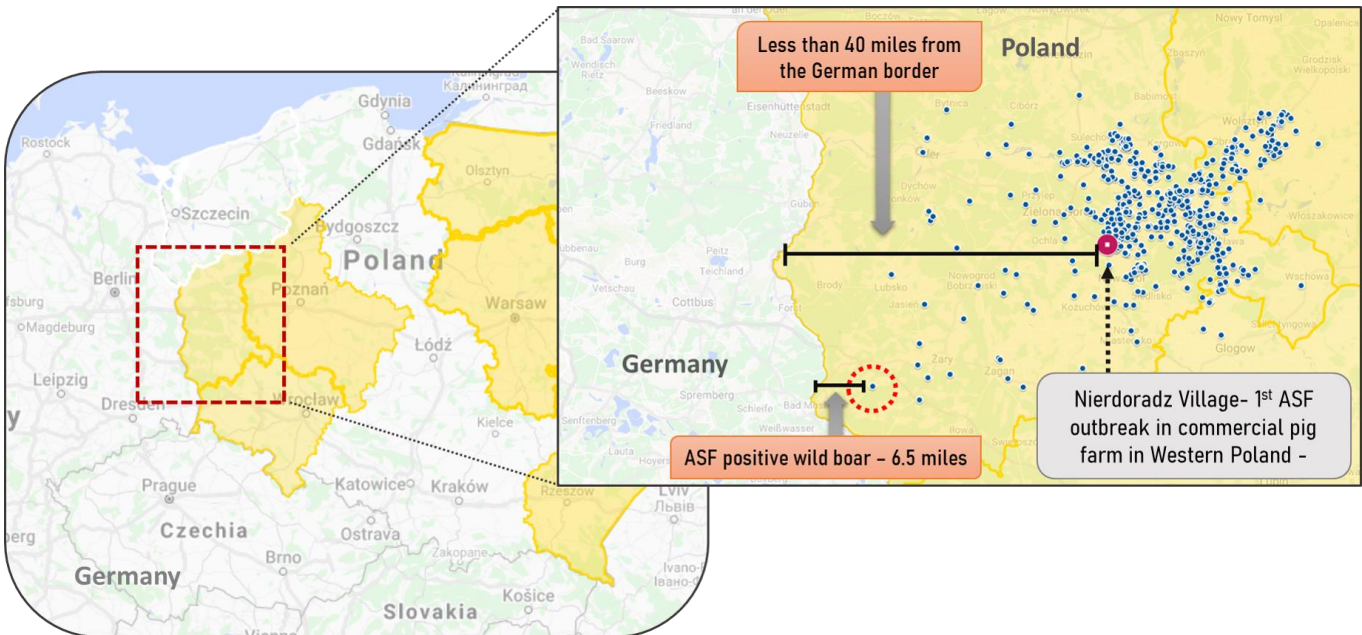
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### African Swine Fever

#### EUROPE Poland

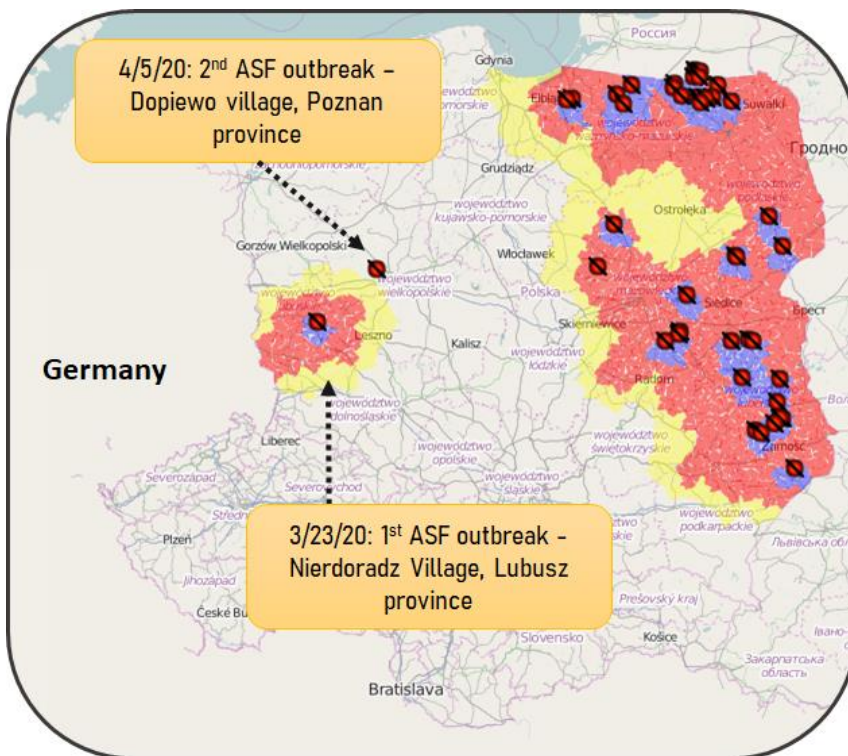
##### *First commercial farm affected in western Poland*

On March 23, the first ASF outbreak in a large domestic pig farm was reported in western Poland (Niedoradz), located approximately 65 km from the German border (Map 1). This marked the first outbreak on a commercial farm. Until then, ASF cases had been only identified in the area's wild boar - including in the vicinity of the affected farm, about 2 km.



Map 1. Location of reported ASF outbreaks in Western Poland. Blue dots: wild boar cases; purple dot: commercial pig farm.

The virus was confirmed to have killed 135 pigs and the rest of the nearly 24,000 pigs - including 7,000 sows - were destroyed. Concern exists surrounding viral spread to other farms since it recently sold 17,000 piglets.



Map 2. Source base map: GVI's website (<https://bip.wetgiw.gov.pl/asf/mapa/>) - Map of ASF outbreaks in commercial farms in Poland and current coverage of restricted areas (in accordance with Commission Implementing Decision (EU) 2020/451.). Designated areas under various restrictions: blue: danger area; red: restricted area; yellow: protection area.

On April 5, another outbreak was reported in the General Veterinary Inspectorate (GVI) website. The latest case was found on April 5, on a farm of approximately 10,000 pigs, in the commune of Dopiewo, Poznań province (Map 2). The farm is located outside the areas subject to restrictions in connection with the ASF as defined in Commission Implementing Decision No. 2014/709 / EU (free area) (Map 2). The connection between outbreaks is under investigation.

### *Concern about the increasing spread of ASF in wild boar*

During the first three months of 2020, the level of ASF in wild boars in Poland has shown a rapid increase, as compared to 2019. According to the information made available by the GVI, from January 1 to March 31, 1729 ASF cases in wild boars have been confirmed in Poland since the beginning of 2020. For comparison, in the same period of 2019, there were only 754 cases of the disease.

*For further information about the dynamic of ASF in the European Wild boar population, check the Article Review Section at the end of the report.*

### *COVID-19 impact on the spread of ASF in wild boar*

The present crisis of COVID-19 infection has also influenced the sanitary shooting of wild boars. With the state of epidemics announced in Poland, also restrictions on movement were introduced at the end of March 2020. According to the legal regulations, within the territory of the Republic of Poland, the movement of persons residing in this area was prohibited, except for certain specific reasons. Under these circumstances, hunting, and in particular, sanitary shooting, was not considered essential and hunters stopped their activity pending the resolution. The Polish Hunting Association has asked the prime minister, the minister of the environment, the minister of agriculture and the minister of home affairs about hunters' activities in connection with restrictions introduced during the coronavirus epidemic.

**In the reply, on April 1, 2020, an amendment to the legal statement was issued, excluding sanitary shooting from coronavirus restrictions. It means that hunting for wild boars during eradication of ASF can continue.**

### *ASF gets closer to the German border*

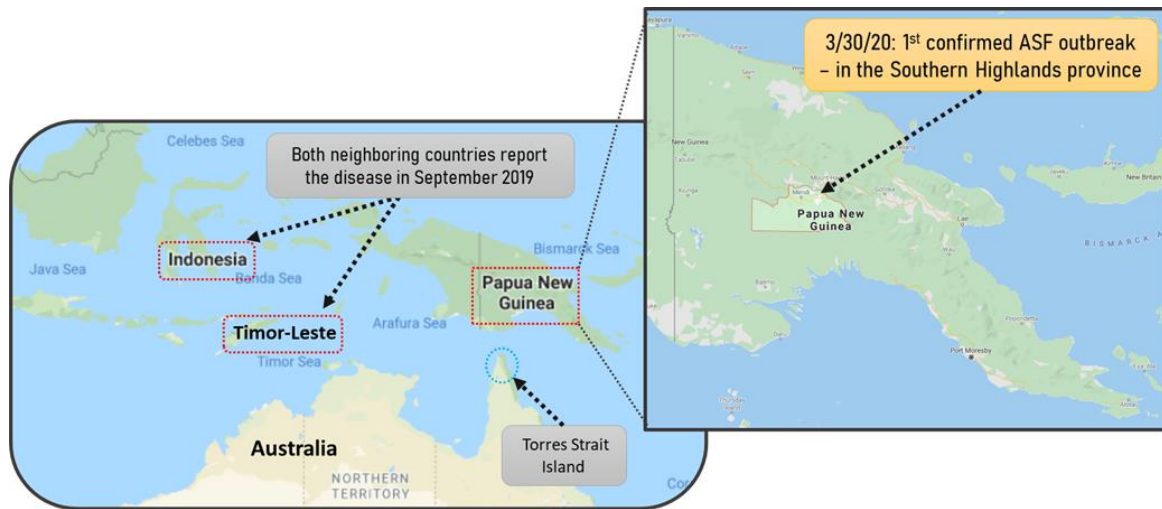
ASF infected wild boars continue to be detected in western Poland through the month of March. The month wraps up with the identification of 209 positive sites with the most recent case found 10.5 km from the German border (16km west of the city Zary).

In Germany, Saxon authorities have completed the construction of a 128-kilometer electric fence along the Polish border. The electric fence is about 30 inches high and also emits odors that wild boars avoid. German and Polish vet authorities maintain close contact to protect against the introduction of ASF into Germany.

## **ASIA**

### **Papua New Guinea**

Papua New Guinea reports a confirmed outbreak of ASF at the end of March. More than 300 pigs had died in previous months in the Southern Highlands (Map 3). As of March 30, more than 1500 pigs have died in the Southern Highlands Province (Mendi, Upper Mendi, and Nipa districts).



Map 3. Location of ASF outbreak in Papua New Guinea. In dotted red boxes, ASF positive countries in the region.

The COVID-19 awareness team deployed in the region will also include ASF in their information campaigns across the province. Officials are also in the area collecting blood samples to identify the spread of the disease in neighboring provinces.

#### *Neighbors on high alert*

Australia has ramped up border and farm biosecurity measures to prevent the spread of ASF into the country as a result of its close proximity to Papua New Guinea.

Since last September when two other neighboring countries, Indonesia and Timor-Leste, reported the disease, the federal government announced a response package of further \$66 million for airport and mail center security to stop ASF at the border. This funding will allow deploying 130 new biosecurity officers in airports, six more detection dogs in airports and mail centers, and two 3D X-ray machines in Sydney and Melbourne mail centers, by July 2020.

Meanwhile, biosecurity measures in place in the Torres Strait Island (northern Australian territory, closest to Papua New Guinea: Map 3) have been ramped up as a result of COVID-19 and are being re-assessed to ensure they effectively manage the risk that ASF in PNG poses to Australia.

#### **The Philippines**

In the country, 69 new outbreaks of ASF have been reported and as of March 30, a total of 251,450 pigs were culled since the first outbreak in July 2019.

New outbreaks have been recorded in the north, central and south regions. Illegal movement of animals and feeding of catering waste (swill) were the major sources of outbreaks, according to the department of agriculture.

Last February, the president announced the creation of a national task force to oversee and implement effective and coordinated policies and strategies to manage, contain and control the spread of such diseases.

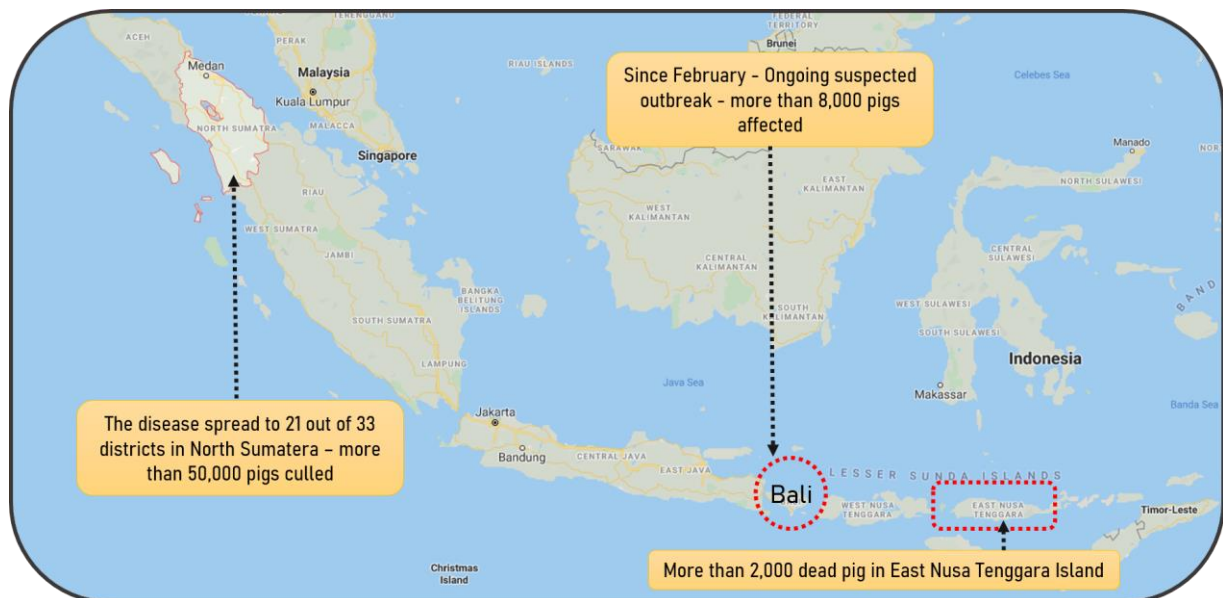
## Indonesia

On February 5, nearly 2,804 pigs have died and 4,107 were sick in Bali from an unidentified disease. Authorities said that the symptoms exhibited by the pigs prior to their death were indicative of ASF, but has not been confirmed.

Pig farmers were concerned that the disease could be related to the ASF fever outbreak that has resulted in the deaths of almost 50,000 pigs in North Sumatra over the past few months (estimated pig population = 1,200,000 head based on Livestock and Animal Health Statistics (DGLAHS, 2018)).

Most of the deaths were recorded in Badung regency (903) and Tabanan regency (813). The rest were from Gianyar, Denpasar, Karangasem, and Bangli. Though the exact numbers might be difficult to pinpoint with more cases being reported, the situation seems to be escalating as there were only around 1,000 swine deaths reported just last month, according to the country officials.

Blood samples from the dead pigs were sent to the Medan Veterinary Research Center in North Sumatra to get tested after initial tests ruled out the three common diseases that usually afflicted pigs in Bali, namely septicemia epizootic, hog cholera, and streptococcus suis.



Map 4. Location of current ASF outbreaks (including those already reported to OIE, and those not yet confirmed).

## Report Review -

### *Business Continuity in the Face of African swine fever - Compartmentalization strategy*

Many countries are currently preparing for an ASF outbreak and are focusing on movement restrictions, culling, decontamination, disinfection and surveillance to regain disease-free status. These are necessary actions but damaging to individual pork producers. In addition, many countries also plan to practice zoning which is a practice of delineating distinct geographical areas (often defined by administrative subdivisions) with a different disease status to the rest of the animal population. The establishment of disease-free zones enables unaffected regions to continue trading while the disease is controlled and eradicated in other parts of the country.

The problem is, if ASF outbreak occurs in a country:

- *How do unaffected pig producers maintain business continuity?*
- *How do they exclude the disease from their farms and, importantly, show they have excluded ASF so they can get back to trading as quickly as possible, or even avoid trade disruption completely?*

While the ASF pandemic is complex and rapidly changing and a variety of tools should be used, one tool to achieving business continuity in the face of an outbreak is compartmentalization. The technical White Paper released by AUSVET and One Health Scientific Solutions ([LINK](#)), has the purpose to introduce the concept of compartmentalization as a potential answer to these questions while reviewing key aspects of its implementation.

#### *What is it?*

Like a zone, a compartment is a defined population with a different disease status to the rest of the country. However, there are two very important differences (OIE):

1. While a zone is defined in terms of a geographical area, a compartment is **defined in terms of the biosecurity barrier** applied around an integrated management system. *A compartment can, therefore, be made up of either a single establishment or multiple integrated farms, under the same ownership or management.*
2. *Zones are usually only defined and accepted after an ASF outbreak, but a compartment can be established, **approved by the veterinary authorities, and accepted by trading partners** before an outbreak.*

Planning and implementation of a compartment should ideally occur before ASF is detected in a country. It is also possible to establish ASF-free compartments in a country that is already infected with the disease. In this case, if a company is interested in exporting products, under OIE's international animal health standards, it is possible to export to an ASF-free country, as long as the compartment is accepted by the veterinary services of both the exporting and the importing country.

The report also describes the major steps that need to be taken, and considerations that must be addressed, to implement a compartment in advance of an ASF outbreak:

1. Consideration of the international standards
2. Practical considerations (e.g. company size and integration)
3. Biosecurity plan development
4. National standards for compartmentalization
5. Recognition of the compartment by trading partners.

*“Compartments are most easily implemented by single companies that have integrated production processes. However, there may also be scope for industry bodies and national veterinary services to working together to establish voluntary schemes that smaller producers can participate in. It will be more difficult for nonintegrated packing companies with many pork suppliers to achieve compartmentalization, but if a packing company is integrated, or has only several major suppliers, compartmentalization may still be possible through close cooperation with pork producers.”*

Dr. Madin, Ausvet Managing Director, highlights that *“While ASF is not present in many pork-producing countries, it is prudent for all businesses to plan to mitigate the impact of this disease. One suitable tool will include excellent biosecurity and may include the implementation of compartments. We hope that this white paper will help producers and industries to better understand what this means, and the process required to set up a compartment.”*

Creating an ASF-free compartment can take time, is complex, and requires cooperation from the national veterinary authority and trading partners, but is one of several key risk mitigation strategies for ASF.

Technical White Paper Business Continuity in the Face of African swine fever: Compartmentalization and Company Biosecurity - Ausvet and One Health Scientific Solutions (2019) - [LINK](#)

## Article review -

### *Evolution of the ASF Infection Stage in Wild Boar Within the EU (2014–2018)*

In this article, it's being reported that while for a number of years surveillance data has shown high case-fatality rates in wild boar found dead, particularly in newly infected areas, current evidence suggests that circulating strains of moderate virulence may have very different presentations, showing some infected animals can remain asymptomatic and might even survive the infection. The report highlights that an increased presence of virus strains of moderate virulence can complicate ASF diagnosis as well as the mitigation and control of the disease. ASF surveillance data in wild boar in the four EU countries where ASF has been present for longer was analyzed comparing the spatial density of antibody-positive notifications with the time ASF has been present per region.

Results show an increasing trend in potential survivors (hunted wild boar with confirmed PCR negative and antibody-positive results), which enhances the importance of surveillance design to sample and test shot wild boar. The authors remarked the importance of surveillance data based on ASFV detection by PCR and serology to assess the status of the epidemic in wild boar.

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Centro de Investigación en Sanidad Animal (CISA), INIA, Valdeolmos, Spain  
ORIGINAL RESEARCH ARTICLE Front. Vet. Sci., 01 April 2020 | <https://doi.org/10.3389/fvets.2020.00155>

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