

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 systematically 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

Monday, August 8, 2022 – Monday, September 5, 2022

Report Highlights

- **FMD in Indonesia:** Authorities and the regional community are partnering to deploy an urgent vaccine campaign to prevent further spread of the disease - so far, a total of 1,589,144 head of livestock have been vaccinated.
- **FMD in South Africa:** Week three of its national cattle movement ban continues as the country still battles over 120 open outbreaks of the disease.
- **ASF in Russia:** First 2022 outbreaks in commercial farms - at least five premises affected so far.
- **Vietnam ASF control:** Authorities have temporarily halted the ASF vaccination deployment amid reports of pig deaths pending investigations.

OUTBREAKS BRIEF

R	Location	Date	Dx	Impact
2	Multiple locations, Indonesia	Aug	FMD	Over 290 districts affected - 497,834 animals infected.
2	Multiple locations (western region), Russia	Aug	ASF	At least five commercial farms holding over 25,000 pigs reported outbreaks.
1	Kaski and Lalitpur districts, Nepal	8/28	ASF	Over 1000 pigs dead.
1	Region IX (Zamboanga Peninsula), The Philippines	8/12-20	ASF	Seven outbreaks registered - 3,178 pigs dead - 838 hog raisers affected.
1	Tete province, Mozambique	8/3	FMD O	917 cases
1	Northeast region, Botswana	8/18	FMD SAT-2	38 cases and 888 susceptible animals
	Gauteng, KwaZulu-Natal, Mpumalanga, and The Free State, South Africa	9/2	FMD SAT-3	27 new FMD cases, all in cattle, bringing the total number of cases to 3,335

Outbreaks described in the table above are colored according to an assigned significance score. The score is based on the identified hazard and potential to affect the US swine industry. Rank (R) Blue: 1 - no change in status; Red: 2 - needs extra attention as the situation is dynamic; Black: 3 - requires consideration or change in practices to reduce exposure to the US swine industry. A map with the location of the events reported is available at the end of this report.

Foot and Mouth Disease (FMD)

ASIA

Indonesia

From May 5 till August 20, the total number of infected animals reached 497,834, including 473,019 cattle, 19,131 buffalo, 1,728 sheep, 3,868 goats, and 88 pigs. According to the data presented by the task force, the number of animals recovered reached 341,353, whereas 6,544 livestock were reported dead.

As of August 20, FMD has affected 290 districts and cities in 24 provinces of Indonesia.

To get the situation under control, the Indonesian government has launched a vaccination campaign with imported vaccines. So far, the Indonesian Ministry of Agriculture has reportedly imported more than 51.8 million vaccine doses, worth about USD \$87 million, from France, Brazil, and China. On August 26, the first batch of 1 million FMD vaccine doses provided by the Australian Government arrived in Indonesia. As a part of a \$10 million biosecurity package, Australia will supply a further USD \$4.4 million in FMD vaccines in the months ahead.



Map 1. Distribution of FMD-affected animals in the current outbreak in Indonesia

In parallel, local authorities are working on developing their own FMD vaccine, initial massive production of which is expected in September. The local veterinary vaccine producer Pusvetma is expected by the Indonesian government to produce at least 35 million doses by the end of 2023 in a bid to mitigate the re-emergence of FMD.

As of August 20, a total of 1,589,144 head of livestock had been vaccinated throughout the country, including 1,505,113 cattle, 23,460 buffaloes, 34,978 sheep, 15,090 goats, and 10,503 pigs. As an example, in Bali (August 11), around 12% (116,000) of the total cattle population of the province (989,932) has been vaccinated. The priority zones for vaccination include popular tourist destinations of Bali, as well as cattle farming centers such as East Java and West Nusa Tenggara. However, all 24 affected provinces are targeted for vaccination as the government aims to inoculate the whole animal population in regions designated as outbreak regions.

The introduction of control measures, namely vaccination of livestock, restriction of animal movement, traffic control, surveillance, prohibition of the entry of livestock from other areas, strict quarantine, good maintenance management, improving sanitation, and regularly disinfection of cages and surrounding environments, had slowed down the rate of new infections across the 24 provinces the virus has reached.

OCEANIA

Regional concern with the evolving situation in the neighboring country

Australia

To keep its territory FMD-free, Australia has launched the three-pronged approach: helping its neighbors deal with the outbreak, strengthening its biosecurity borders, and enhancing its preparedness on the ground.

1. The Australian government announced a \$10 million biosecurity cooperation package to assist Indonesia in responding to the outbreaks of both FMD and lumping skin disease (LSD), which includes the supply of additional vaccines and technical and advisory support. Australia will deliver personal protective equipment and disinfectants, train the staff on the ground, and provide biosecurity expertise to tackle these outbreaks. It has also committed an initial \$500,000 to Meat and Livestock Australia, responsible for coordinating support from the Australian industry for the Indonesian feedlot sector's emergency response to these diseases.

With the support of the Australian government, a portable molecular lab developed by Agriculture Victoria was opened in Timor-Leste to boost local animal health and help safeguard Australia from exotic animal diseases. The purpose of the lab is to help deliver veterinary diagnostic services in Timor-Leste, targeting exotic diseases such as ASF, CSF, FMD, and LSD. The lab will ensure both countries are better prepared to protect their animals and industries from biosecurity threats.

2. Heightened screening activities at the Australian border are being implemented based on reviewed import permits for animal products from Indonesia that may carry FMD. Those of concern have been suspended, and increased screenings for dangerous goods coming through international mail centers have been introduced. Stringent clearance requirements for travelers entering Australian airports and mandatory sanitation foot mats were introduced for passengers arriving from Indonesia at international terminals; additionally, biosecurity officers and detector dogs were deployed in airports and mail centers.
3. The Australian government and industry are undertaking significant FMD preparedness activities collaboratively. Thus, detailed response planning and a comprehensive whole-of-government approach were introduced to ensure resources are available from a wide range of agencies. The new exotic-animal-diseases preparedness task force, consisting of the Australian Defense Force, Australian Border Force, and Animal Health Australia, was established to provide urgent advice on Australia's response in the event of a potential outbreak. As key actions on the ground:
 - a. Awareness campaigns are being delivered to Australia's livestock producers and agriculture industries, travelers, and a range of other stakeholders.
 - b. The government increased disease surveillance across Australia's Top End (Western Australia, Northern Territory, and north Queensland). Pig farms, rubbish tips, and ports are monitored to ensure that pigs are not fed food scraps.

New Zealand

Although the risk of the recent outbreak in Indonesia to New Zealand remains low, the New Zealand government remains on high alert. Thus, additional control measures, such as stepping up checks at airports, introducing disinfectant mats for people returning from Indonesia to clean their footwear, an

awareness campaign targeting travelers, an on-the-ground audit of the palm kernel supply chain in Indonesia, and the establishment of an FMD Readiness Taskforce are ongoing. The Ministry for Primary Industries of New Zealand is working closely with other government agencies, industry partners, and stakeholders to plan for various scenarios in case of an FMD outbreak.

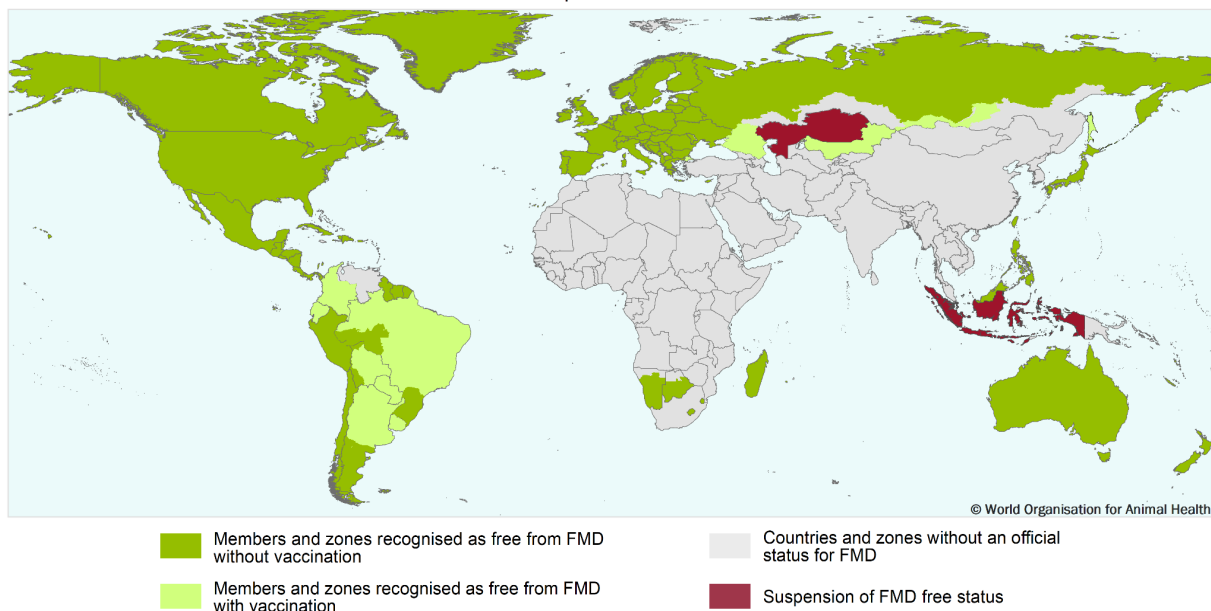
The Government has made significant biosecurity investments in recent years, of which \$21.2 million is to boost critical diagnostic, surveillance, and investigative capability and heightened readiness for foot-and-mouth and other high-impact animal diseases.

AFRICA

FMD outbreaks in Southern Africa

FMD outbreaks have been reported in four of the eight southern African countries that comprise the FAO's FMD Pool 6 - Southern Africa, between July and August 2022. These countries are: Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe. Serotypes SAT 1, SAT 2, and SAT 3 are present in this region, but the detection of serotype O in Zambia (2018-2021), Namibia (2021), and Malawi (2022) represent a new incursion into Pool 6. Southern Africa has a large cattle population and has successfully controlled FMD in the past, with countries such as Namibia and Botswana and South Africa having regions/zones recognized by WOAHA as FMD-free with no vaccination. Until recently, South Africa had FMD-free zones where no vaccinations were administered. Because of their FMD-free status, these countries were able to access international beef markets. Outbreaks in the Southern Africa region are threatening the current status. All of these outbreaks have been reported to spread further as a result of illegal animal movements. Understanding the epidemiology of the disease is critical for developing control strategies, but this is currently hampered in some countries by the time lag in confirming the virus serotypes responsible for outbreaks.

Last update June 2022



Map 2. WOAHA Members' official FMD status map

Regional highlights

Malawi | August 2: A follow-up report was submitted to [WOAH-WAHIS](#), showing that recent FMD outbreaks had been successfully controlled by movement control and ring vaccination. The first outbreak started on February 4, 2022, at Lifiledi, Ta Zulu, Mchinji, and was confirmed to be caused by

FMDV serotype O. The source of the outbreak is inconclusive but has been attributed to the illegal movement of infected cattle. It then spread to nearby villages with 411 cases, putting 17,000 cattle at risk. A total of 19,075 cattle were vaccinated, and on August 1, 2022, the outbreak was declared resolved.

Mozambique | August 03: Authorities [reported](#) a recurrence of FMD in the village of Chinheche, in Tete province. This outbreak is said to have begun on July 24, 2022, due to the illegal movement/introduction of infected animals. There were 104 cases reported, with 9,175 susceptible animals. Since the virus serotype has not yet been determined, and no vaccination has been administered, the outbreak has been largely contained through restrictions on animal movement. There were previously [reported outbreaks](#) of FMD type O in cattle at Nhantha on March 16, 2022, and Nsado on May 14, 2022, Mualadzi, province of Tete, with approximately 917 cases and 6,791 susceptible cattle. Before these outbreaks, the last reported occurrence of FMD in Mozambique was on August 13, 2020.

Botswana | August 18-30: On August 18, approximately 20 cattle in a herd of 57 were observed in [Butale village](#) in Masunga, northeast Botswana, with clinical signs suggestive of FMD. An official report of a suspected FMD outbreak was made on August 24. Fomites are thought to be the source of the infection. Sera and tissue samples were submitted to the WOAHS Sub-Saharan Africa Regional Reference Laboratory (SSARRL) for FMD (Botswana Vaccine Institute) for diagnostics and were confirmed on August 27 to be serotype [SAT 2](#). FMD was last detected in Botswana on December 21, 2018. This outbreak currently has 38 cases and 888 susceptible animals. Following this outbreak, authorities imposed a ban on the movement of all cloven-hoofed animals throughout the country and [halted beef exports](#). Prior to these recent occurrences, Botswana had maintained its status as a WOAHS member with an FMD-free zone where vaccination is not practiced.

South Africa | September 02: A follow-up report to WOAHS-[WAHIS](#) shows that there are currently 27 new FMD cases (officially reported; local media outlets reported a number closer to 127 active outbreaks), all in cattle, bringing the total number of cases to 3,335. FMD is currently present in Gauteng, KwaZulu-Natal, Mpumalanga, and The Free State. This current wave of infections is part of an outbreak that started on March 02, 2022, in the infected zone of Limpopo. The source of this outbreak is inconclusive, but further disease spread has been attributed to animal movement. Typing of the virus indicated that this is an SAT-3 serotype rather than an SAT-2 as originally reported. In an effort to control the spread of FMD, the Minister of Agriculture, Land Reform, and Rural Development announced a [total ban](#) on animal movement in the country.

African Swine Fever

EUROPE

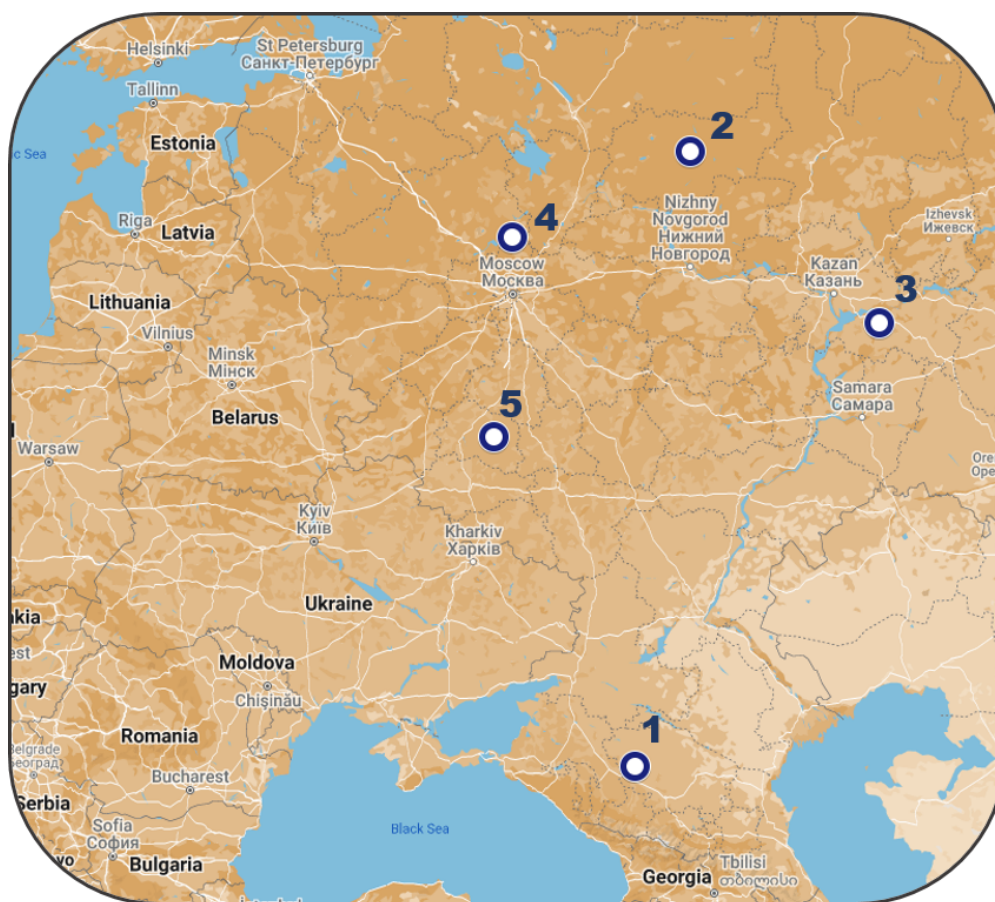
In August (08/02/2022 - 08/31/2022), seven countries (Latvia, Lithuania, Moldova, North Macedonia, Romania, Russia, and Ukraine) reported 71 ASF outbreaks in domestic pigs. No further outbreaks were declared in Germany, nor in Serbia, Slovakia, or Poland. Even though the number of reporting countries decreased from 10 to seven, the number of outbreaks revealed was almost the same (n=73 in July). According to the WOAHS-[WAHIS](#), the latest outbreaks in Romania, North Macedonia, Moldova, and Ukraine have involved small backyard herds.

According to the latest reports (European Commission Animal Disease Information System (ADIS), WOAHS-[WAHIS](#), EMPRES-i FAO), a total of 433 ASF outbreaks in wild boars was reported by 11 countries (Estonia, Germany, Hungary, Italy, Latvia, Lithuania, Moldova, Poland, Romania, Russia, and Slovakia). Compared to the previous month, North Macedonia and Serbia did not report any new ASF outbreaks; however, Moldova declared one case, and the number of confirmed cases decreased 1.1 times (n=488 previous month).

Since January 1, 2022, the total number of ASF outbreaks in wild boars has reached 5092 and 324 in domestic pigs, affecting 14 and 12 European countries, respectively (ADIS, 08/28/2022).

Regional Highlights:

- **Russia:** At the end of July, the first outbreak in a commercial farm in 2022 was registered. Animals tested positive for the virus among more than 2,700 pigs at a premises in Stavropol's North Caucasian federal district region (Reference 1 in Map 3). This was followed by several outbreaks on big commercial farms affecting the North Caucasian, Central, Southern, and Northwestern federal districts.
 - On August 14 | A farm with over 6,109 in Kostroma oblast in the Central federal district reported the disease. This is one of three production sites of the largest pork producer in the Kostroma region, maintaining 30,000 pigs, producing feed, processing meat, and making sausages (Reference 2 in Map 3). (*Officially reported to the WOA on Sept 2*).
 - On August 8 | Another outbreak occurred on an industrial farm with a population of 5,000 pigs in the Republic of Tatarstan (Reference 3 in Map 3).
 - On August 23 | The ASFV got close to the state's capital, causing an outbreak on a farm with a population of more than 8,500 pigs in the Moscow region (Reference 4 in Map 3).
 - On September 2 | In the region of Orlovskaya, another outbreak was reported affecting a farm with 3,006 pigs (Reference 5 in Map 3).



Map 3. Locations of the ASF outbreaks in commercial farms in Russia over the past month

At the same time, ASF foci on backyard farms were registered in Vladimir, Kaliningrad, Kostroma, Yaroslavl, Vologda, Smolensk, Tver, Ivanovo, and Pskov regions.

According to the Russian Union of Pork Producers chairman, Yuri Kovalev, ASF in Russia currently does not pose risks of hampering the country's pork production: relatively low volumes affected by the outbreaks, while the internal pork market is experiencing general oversupply.

ASF cases in backyard farms remain widely distributed in southern and northwestern federal districts and comprised between 1 and 135 pigs. Backyard farms and wild boars: since the beginning of 2022, less than half out of more than 80 ASF outbreaks registered in Russia took place at backyard farms, while the rest were among wild boars.

- **Moldova:** ASF first occurrence in two zones. The disease was registered on a small backyard farm in Ciutulesti, Floresti district, where one out of four animals died, and on the domestic pigs from a backyard in locality Chișcăreni, Sîngerei district, where two animals died, and 12 were culled.
- **North Macedonia:** ASF hits a farm with 430 pigs, while the rest of the outbreaks have affected small backyard herds.

Countries with ASF-free status are strengthening their control measures

- **Switzerland** | The country [will use dogs to detect ASF in pigs](#). As The Federal Office for Food Safety and Veterinary Affairs assumes that there is a high risk that ASF will arrive in Switzerland from Germany, the first batch of specialist hounds are currently being trained to detect ASF in farmed pigs. The training takes place in the northeastern Swiss canton of Thurgau, which borders Germany, and it is expected that the dogs will be ready to check for the ASF virus in the northeastern border canton already in the fall.
- **UK** | The National Pig Association continues to lobby the government to raise national biosecurity measures by better protecting the borders and introducing stricter control measures. In this context, the results of the Animal and Plant Health Agency (APHA) risk assessment for the introduction of ASF to the country concluded that:
"...while we consider the overall risk of entry of ASF virus into the UK from all combined pathways remains at medium, because of the regular detection of outbreaks and wild boar cases in new areas as a result of human-mediated routes, this particular pathway is now considered to be HIGH. There is considerable uncertainty as the movement of people into the UK at present is affected by travel disruption, fuel prices, and reducing seasonal worker numbers."

In response to these updates, authorities have announced a ban on non-commercial pork imports. Starting September 1, 2022, [it will no longer be legal to bring pork or pork products](#) weighing more than 2kg (4.4lb) into Great Britain unless they are produced to the EU's commercial standards. The ban is for products from the EU and European Free Trade Association states (Switzerland, Norway, Iceland, or Liechtenstein) but does not apply to commercial imports. **Previously, incoming travelers from the European Union could bring meat and meat products from ASF-affected states, followed by proper disposal in a way that pigs and wild boar could not eat it.** It is also illegal to trade in pork or wild boar meat from ASF-affected areas and to bring in meat products from Asia or Africa.

AMERICA

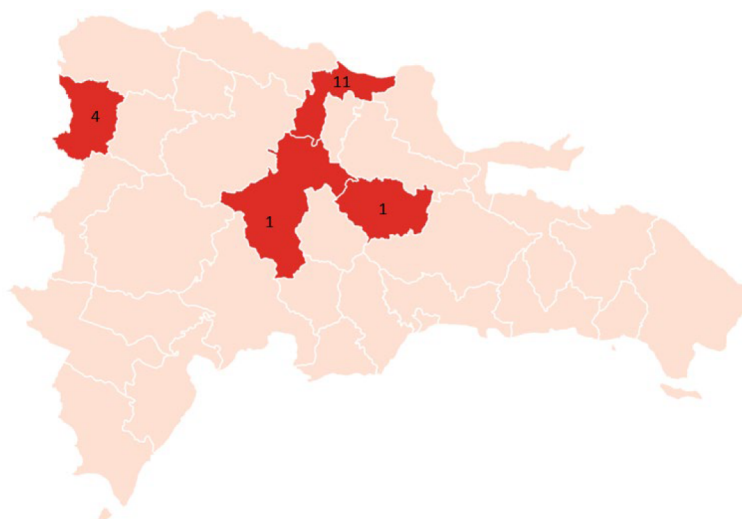
The Dominican Republic

The Epidemiology Division, Department of Animal Health (DAH), Directorate of Livestock, Ministry of Agriculture in the Dominican Republic, implements the early alert reporting system, where all suspected cases are reported. There are some backlogs in their submission to WOAAH, inherent to the burden and challenges associated with investigating each reported suspected case.

In August, authorities confirmed by molecular diagnosis 20 new outbreaks, bringing the total of accumulated confirmed cases to 1,615 distributed in 31 provinces; 980 of those outbreaks have been resolved.

Since the beginning of the outbreak, samples from over 4,899 production sites have been taken and processed by Dominican veterinary services; 417 of them during the last month (the period between 7/24 and 8/21), from which 20 tested positive for ASF.

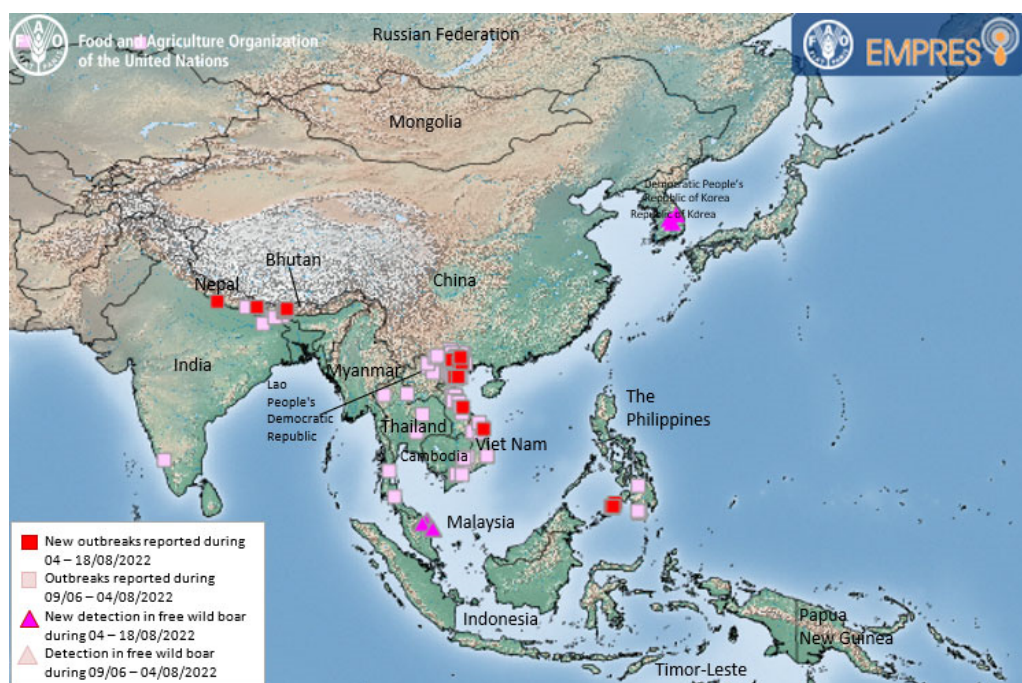
It is important to note that the positive rate has changed since November 2021 (from over 40% to 17%), denoting the progressive efficacy of control efforts across the country. Still, the active spread of the virus throughout the population is of great concern.



Map 4. The distribution of reports of suspected cases in the Dominican Republic in the last week (8/14 - 8/21).

ASIA

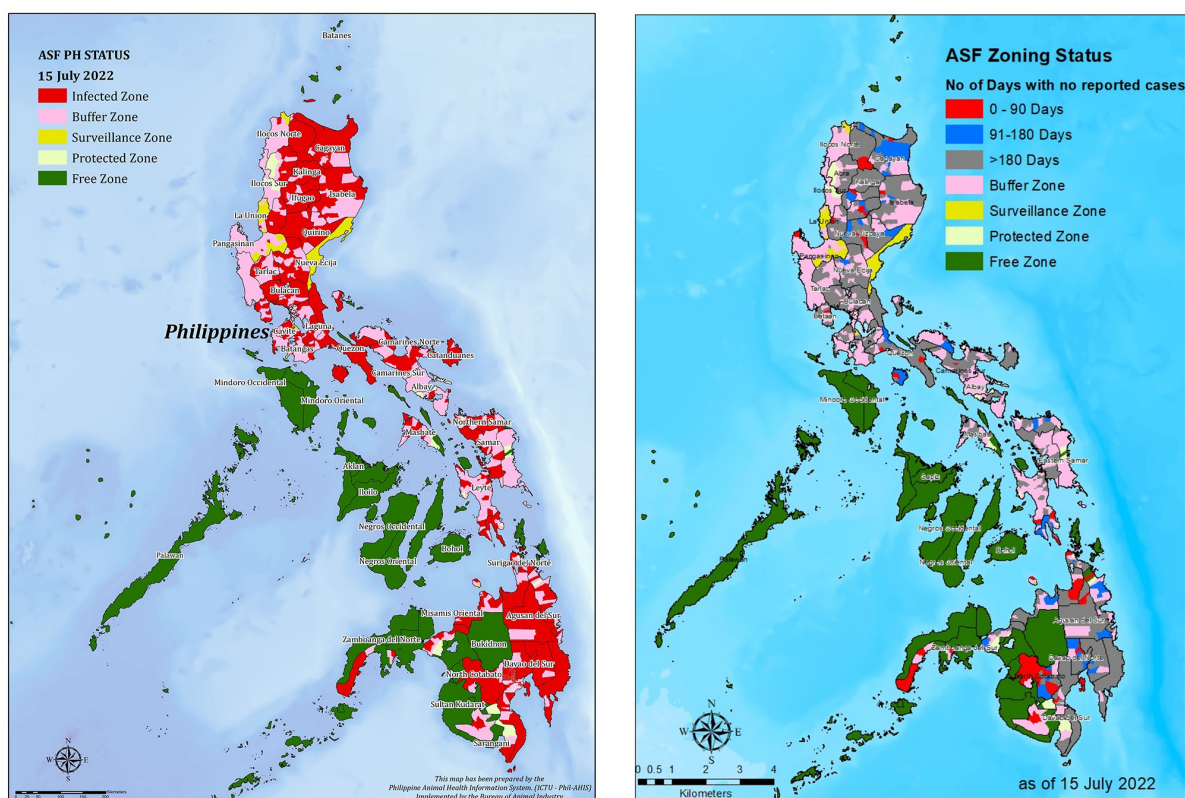
In August, six countries - India, Nepal, The Philippines, South Korea, and Vietnam - reported ASF outbreaks in domestic swine. South Korea and Malaysia reported detections of ASF in wild boar.



Map 5. African swine fever situation in Asia July-August 2022 (Source: FAO situation report)

Regional highlights

- India | August 7-19:** ASF cases continued to occur in the country. Local [news outlets](#) reported outbreaks in Patiala, Punjab state. Between August 7 and August 9, more than 200 pigs were reported dead of unknown causes in and around Badi Nadi. Officials of the Animal Husbandry Department sent samples to the Regional Disease Diagnostics Laboratory for testing. On August 19, almost 300 pigs were reported to have died in Chhoti and Bari Nadi villages. These pigs' deaths were confirmed to be due to ASF, and Punjab's state has been declared a "controlled area." ASF epicenters have been identified in two villages in the Patiala district: Bilaspur and Sanauri Adda. According to [local news reports](#), state authorities declared a one-kilometer radius around the epicenters as an infected zone and a 10-kilometer radius around the epicenter as a surveillance zone. The movement of live or dead pigs, pork, feed, and other contact materials into and out of infected areas has been prohibited by the state veterinary authority.
- Nepal | August 28:** Two ASF outbreaks in domestic pigs were reported WOH. [On August 8, 2022](#), the first outbreak occurred in Okhaldhunga-14, Pokhara metropolitan city, Kaski, resulting in 280 deaths, 290 cases, and 290 pigs at risk. [On August 14](#), a second outbreak occurred in Lubhu, Lalitpur, resulting in 1050 deaths, 1080 cases, and 1127 pigs at risk.



Map 6. Maps of the Philippines showing: A; the latest ASF zoning status per city/municipality and B; municipality with no reported ASF case for <90 days (red), 91 to 180 days (blue), and > 180 days (grey) (source: The Philippines Department of Agriculture)

- The Philippines | August 12-20:** National authorities reported seven ASF outbreaks in Region IX (Zamboanga Peninsula) to [EMPRESi](#), but no details on the epidemiology of these

seven outbreaks were provided. According to [news reports](#) citing Zamboanga City's chief veterinarian, by August 20, the region had recorded pig mortalities of up to 3,178, and ASF has affected 838 hog raisers in 29 of the city's 98 barangays. Vitali district had the most hog deaths (955), followed by Manicahan (838) and Tumaga (787). According to [media reports](#), the department of Agriculture announced that ASF is still present in five of the country's 14 regions; the Cordillera Administrative Region (CAR, northern Luzon), Region 3 (Central Luzon), Region 8 (Eastern Visayas), Region 9 (Zamboanga Peninsula of Mindanao), and Region 12 are the five regions with active ASF cases. Following the first ASF outbreak in July 2019, disease zones were created, and these zones have been useful in controlling ASF outbreaks. A [pig repopulation](#) program has begun in one of the provinces, Ilocos Norte, and the government has begun distributing sentinel piglets in areas designated as buffer "pink" zones.

Vietnam temporarily suspends African swine fever vaccine use

Vietnam has temporarily halted the use of a commercial African swine fever vaccine that was recently approved after a small number of seemingly healthy pigs died after vaccination. The vaccine used was the NAVET-ASFVAC, produced by the National Veterinary Medicine Joint Stock Company (NAVETCO), and is the world's first commercial vaccine for the disease. As per [local newspaper reports](#), at least 100 pigs died in south-central Vietnam (Phu Yen Province) within a week of receiving an African swine fever vaccine shot. According to the [news reports](#) quoting the head of the Phu Hoa District livestock and veterinary agency, "the pigs died as a result of a 'reaction' to the vaccination." Nearly 600 pigs in the province have been inoculated with the vaccine, and over 100 of them have died at 24 farms, while over 400 others had adverse reactions. The province has suspended ASF vaccination until further notice, and Navetco has dispatched experts to Phu Yen to investigate the pig deaths.

References:

Recurrent reports reviewed

WOAH - [WAHIS interface - Immediate notifications](#)

WOAH - [WOAH Asia Regional office](#)

FAO - [ASF situation update in Asia & Pacific](#)

DEFRA - [Animal conditions international monitoring reports](#)

CAHSS - [CEZD Weekly Intelligence Report](#)

European commission - [ADIS disease overview](#)

EUROPE

Russia

ASF in Kostroma ([JSC "Shuvalovo"](#))

[ASF hits first industrial pig farm in Russia in 2022](#)

ASF in Tatarstan ([Peasant \(farm\) commune of Pashkov](#))

ASF in Moscow region ([Neopham-Grigorovo](#))

Switzerland

<https://www.swissinfo.ch/eng/switzerland-will-use-dogs-to-detect-african-swine-fever-in-pigs/47822194>

UK

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AMERICA

The Dominican Republic

SITUACIÓN ACTUAL DE FIEBRE PORCINA AFRICANA - Informe Técnico - Semanas Epidemiológicas 33-22

ASIA & OCEANIA

India

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The Philippines

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<https://data.apps.fao.org/empres-i/?share=f-61ea0be9-f54f-4845-800a-0ae0e4f013ca>

<https://www.pna.gov.ph/articles/1181864>

<https://pageone.ph/iocos-norte-starts-hog-repopulation-in-pink-zones/>

Indonesia

[Indonesia to produce vaccines to contain FMD re-emergence](#)

[Indonesia slams Australia's Pauline Hanson over Bali foot and mouth claims](#)

[Over 1.2 Million Cows Vaccinated Against FMD: Task Force](#)

[Indonesia Includes Bali as Priority Zone for Foot and Mouth Vaccination](#)

[1,589,144 livestock vaccinated against FMD: task force](#)

<https://www.abc.net.au/indonesian/2022-08-15/map-of-fmd-cases-in-indonesia/101333290>

Australia

[Foot and mouth vaccine doses arrive in Indonesia](#)

[Strengthening Australia's Biosecurity Partnership with Indonesia](#)

[Australia supports Indonesia's response to Foot and Mouth outbreak](#)

[Action by governments – FMD prevention and preparedness](#)

[New biosecurity measure to protect against FMD](#)

[Government steps up protections against foot-and-mouth disease](#)

[Victorian molecular lab opens in Timor-Leste](#)

AFRICA

<https://www.woah.org/app/uploads/2022/06/fmd-world-eng.png>

Malawi

<https://wahis.woah.org/#/report-info?reportId=58083>

<https://promedmail.org/promed-post/?place=8704865.58828#promedmailmap>

Mozambique

<https://wahis.woah.org/#/report-info?reportId=58149>

Botswana

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South Africa

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<https://www.politicsweb.co.za/politics/ban-on-movement-of-cattle-has-serious-repercussion>

The GSDMR team compiles information drawn from multiple national (Ministries of Agriculture or Livestock, Local governments, and international sources (WOAH, FAO, DEFRA, EC, etc.), as well as peer-reviewed scientific articles. The team makes every effort to ensure but does not guarantee the accuracy, completeness, or authenticity of the information. The designation employed and the presentation of material on maps and graphics do not imply the expression of any opinion whatsoever on the part of the GSDMR team concerning the legal or constitutional status of any country, territory, or sea area or concerning the delimitation of frontiers.

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