

SWINE HEALTH INFORMATION CENTER
FINAL RESEARCH GRANT REPORT FORMAT

A near-real time global surveillance system for swine diseases

Project #24-002

Final report

Maria Sol Perez Aguirreburualde (P.I.), University of Minnesota, April 2026

Industry Summary: Since 2018, African Swine Fever (ASF) has remained a persistent global threat, with continued spread and re-emergence across Asia, Europe, and the Americas. More recently, the introduction of Foot-and-Mouth Disease (FMD) in Europe, through two independent incursions, and the first-time detection of several FMD serotypes in new geographic regions have further demonstrated that transboundary animal diseases (TADs) are an evolving and intensifying concern. These events reinforce a core lesson first highlighted during the 2013 Porcine Epidemic Diarrhea Virus (PEDv) outbreak: the swine industry requires robust, real-time situational awareness to anticipate, prepare for, and respond to emerging threats.

In parallel, the rapid expansion of AI-driven analytical tools, including automated event-based surveillance platforms, has created both new opportunities and new challenges for the industry. Assessing the usability, performance, and reliability of these dynamic technologies, whose outputs can shift rapidly with algorithm updates, has become an emerging priority. Over the current grant cycle, our team has actively explored this issue, evaluating how AI-generated data can be responsibly incorporated into risk assessment frameworks while identifying limitations that must be addressed. This will remain a key area of focus in the next phase of the project.

Against this backdrop, our private–public–academic partnership continues to strengthen a system capable of near real-time identification of global animal-health hazards and contextualizing their relevance for the U.S. swine sector. Monthly hazard reports are shared with veterinarians, producer organizations, researchers, government agencies, and communication specialists across the value chain. This coordinated approach enhances situational awareness, supports informed decision-making, and reinforces national prevention and mitigation strategies against foreign animal disease incursions.

Ultimately, the system developed through this long-term collaboration contributes directly to early detection, improved readiness, and sustained industry resilience in the face of an increasingly complex global TAD landscape.

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Please indicate if you plan to submit this full report for peer-reviewed publication: Yes ☐ No ☒

If you plan to submit this full report for publication, SHIC will only post the industry summary on its website and will delay posting of the full final report according to the terms of the contract (Publication Section 5a).

Key Producer Outcomes:

- Expanded coverage of productive diseases using scientific and gray literature now informs the first version of the global dashboard.
- ASF remains dynamic in Asia and Europe; Hispaniola containment succeeded, but the virus remains endemic in the Dominican Republic.
- FMD activity and serotype shifts across regions reaffirm the need for ongoing monitoring and rapid interpretation.
- First evidence generated on the opportunities and challenges of integrating AI tools into event-based surveillance systems.

Keywords: Swine diseases; global surveillance; hazards; ASF; FMD; AI-enabled surveillance; preparedness; risk assessment.

Scientific Abstract:

This project aims to strengthen and expand a private–public–academic partnership to maintain a near real-time global surveillance system for emerging and transboundary swine diseases. The system identifies global hazards relevant to the U.S. swine industry by actively and passively collecting, verifying, and synthesizing information from official (WOAH, FAO, ADIS) and informal sources (news aggregators, stakeholder networks, ProMED, social media, and field informants). Each month, collected events are evaluated using a structured, multi-step screening process that assesses disease relevance, epidemiological context, and potential risk. Final reports are disseminated through the Swine Health Information Center (SHIC) and made publicly available following a brief quality-assurance period.

Between February 2024 and June 2025, 16 surveillance reports were produced, capturing over 150 events across priority regions. The system monitored substantial changes in ASF epidemiology—including continued spread in Europe and Asia, sustained endemicity in the Dominican Republic, and successful containment in the rest of Hispaniola—as well as notable incursions and serotype shifts in Foot-and-Mouth Disease (FMD). A new analytic dimension was added this cycle: evaluation of AI-enabled tools for event-based surveillance. Preliminary findings, presented at the Symposium on Artificial Intelligence in Veterinary Medicine (SAVY 2.0, 2025), highlight both the promise and the risks associated with integrating dynamically updated platforms into early-warning systems. Additional advances include expanded “Focus On” deep-dive reports with contributions from local experts (e.g., ASF zonification in Romania, surveillance and compensation reforms in the Dominican Republic, monitoring of recombinant ASF strains in Vietnam), development of Dashboard 1.0 summarizing productive diseases globally, and extension of the collaborator network to more than 50 countries. With more than 8,000 page views per year, the Global Disease Surveillance page remains the second most visited section of the SHIC website. Overall, the system continues to enhance global hazard detection, provide rapid contextual interpretation, and support preparedness strategies for U.S. pork producers in an increasingly complex and rapidly evolving global disease landscape.

Introduction:

Since 2018, the global landscape of transboundary swine diseases has undergone significant change. African Swine Fever (ASF) remains one of the most consequential threats, with persistent spread across Asia and Europe, continued endemicity in the Dominican Republic, and successful—but fragile—containment on the island of Hispaniola. Simultaneously, recent incursions of Foot-and-Mouth Disease (FMD) into Europe through independent events and the detection of previously unreported serotypes in new regions highlight an escalating need for sustained situational awareness.

A parallel concern has emerged: the weakening of early-detection, surveillance, and response systems in low- and middle-income countries. As traditional funding channels have become disrupted, national veterinary services in several regions have experienced reduced operational capacity. This increases the likelihood that high-impact diseases may circulate undetected long enough to spread internationally, raising the risk of introduction into currently disease-free countries, including the United States.

At the same time, AI-enabled surveillance tools have rapidly proliferated. While these offer new opportunities for horizon scanning and automated event detection, they also bring challenges around transparency, reliability, reproducibility, and the impact of continuous algorithmic updates. Evaluating the fitness of these tools for early-warning surveillance has become an emerging priority.

Against this backdrop, the need for a robust, multi-source surveillance system rooted in reliable human expertise is greater than ever. This project continues to support a near real-time system that integrates official reporting, soft intelligence, expert review, and contextual analysis to inform U.S. preparedness and decision-making. An overview of the researchable question and its importance to producers.

Objectives:

- **Maintain and refine the near real-time global surveillance system** for priority swine diseases, including the identification, scoring, and contextualization of hazards relevant to the U.S. industry.
- **Expand coverage of productive diseases**, integrating official and gray literature as inputs for the Global Swine Disease Dashboard (Version 1.0).
- **Enhance analytics and expert interpretation** through expanded “Focus On” deep-dive reports with contributions from local/regional veterinary authorities.
- **Evaluate opportunities and limitations of AI-enabled event-based surveillance tools**, assessing their reproducibility, interpretability, and reliability relative to traditional approaches.
- **Strengthen the global network of collaborators**, with priority engagement in Eastern Europe, the Caribbean, Central America, and African regions with emerging or consolidated swine value chains.

Materials & Methods:

• Data Collection

Data were collected through a combination of:

- **Official sources:** WOA–WAHIS, FAO EMPRES-i, EC ADIS, and national veterinary authority communications.
- **Soft data sources:** news aggregators, social media, ProMED, Google Alerts, specialized technical forums, and stakeholder reports.
- **Stakeholder network:** contacts within veterinary services, laboratories, universities, and industry partners in >50 countries.

Daily searches in multiple languages were performed, translated as needed into English, and entered into a centralized database.

• Screening & Evaluation Process

A tiered evaluation system was applied:

1. **Initial screening** to identify potentially relevant events.
 2. **Technical review** by project epidemiologists to classify, verify, and prioritize hazards.
 3. **Scoring** of events using a 0–3 scale based on relevance, epidemiological risk, and industry implications.
 4. **Compilation of contextual information** including regional disease history, movement patterns, and existing control measures.
 5. **Peer review** with SHIC and selected international stakeholders prior to release.
 6. **Public posting** one week later, following quality-assurance review.
- **Emergency Reporting**

For urgent health events (e.g., first-time incursions, major epidemiological shifts), rapid-turnaround “Immediate Release” reports were generated.

• Dashboard Development

Fellows under mentorship of senior experts contributed to:

- Literature extraction for productive diseases
- Data structuring
- Building Dashboard 1.0
- Preparing the architecture for Dashboard 2.0 to be deployed on the CAHFS website.
- **AI Tool Assessment**

The team piloted the use of AI-enabled EBS platforms and large-language-model tools to assess:

- Sensitivity to emerging signals
- Consistency of outputs
- Algorithm update effects
- Usability for field epidemiologists
- Risks of hallucinations or unverifiable claims

Preliminary results were presented at **SAVY 2.0 (May 2025)**, with full results to be presented at the **Leman Conference**.

Results:

Objective 1: Maintain and refine global hazard surveillance

- 16 reports (monthly + emergency) were delivered between February 2024 and June 2025.
- Over 150 events were captured across priority regions.
- Hazard scoring and contextual interpretation expanded to include disease-specific trend analysis.

Date	Highlights
2/6/2024	• African swine fever keeps spreading in Europe: Montenegro has become the 27th European country to report the disease for the first time in wild boars. • ASF in Italy: The European Commission has officially declared the resolved status of the outbreak genotype II in Sardinia and characterized it as "<i>occasional</i>" and "<i>imported</i>" - remaining confined to the province of Nuoro. • ASF in South Korea: First report of ASF in domestic pigs in Gyeonggi-do province since April 2021 - 2,448 pigs culled on site. • Foot-and-Mouth Disease in Africa: Six countries reported outbreaks in January - limited information regarding the responsible viral strains is available; for only two of those, serotype O has been confirmed. • Surveillance at Points of Entry • Port of Dover, UK: Unprecedented volumes of illegally imported meat have been detected by port authorities, raising concerns about the risk of ASF. • Naples, Italy: Traces of ASFV detected in Chinese salamis falsely labeled as vegetarian.
3/5/2024	• African Swine Fever in Europe: Albania has become the 28th European country to confirm the presence of ASF, genotype 2, since the virus was introduced to the continent in 2007. • Control of wild boar populations in Europe: Authorities in Italy, Poland, Estonia, and Norway have issued statements outlining measures to control the wild boar population as a strategy to combat ASF. • ASF in pork meat in Asia: Nearly 10% of Chinese meat products tested positive for ASF during Taiwan's border inspection. Strict border inspections have been effective in preventing high-risk products from entering, as evidenced by a decrease in fines from 3.61 cases per 10,000 passengers to 2.85 from 2019 to 2023, respectively. • WOAH's Thematic Study on Zoning: WOA has launched its first thematic study through the Observatory program, focusing on the international standard of zoning. The study assesses the implementation of zoning for avian influenza, ASF, and foot-and-mouth disease, highlighting its use, challenges, and impacts.
4/2/2024	• African Swine Fever in the Dominican Republic: Report on results of surveillance efforts in 2023 and the first quarter of this year. • China Lifts Ban on Russian Pork: Russia has made its first pork shipment to China in 15 years, sending 27 tonnes of pork following China's lifting of ASF restrictions on Russia in September 2023. • Streptococcus Suis: Fatal outbreak linked to raw pork consumption in Thailand. • Pseudorabies Virus: Authorities in France have reported a resurgence of Aujeszky's disease, with the latest update indicating seven outbreaks since September 2023. • Surveillance at Points of Entry

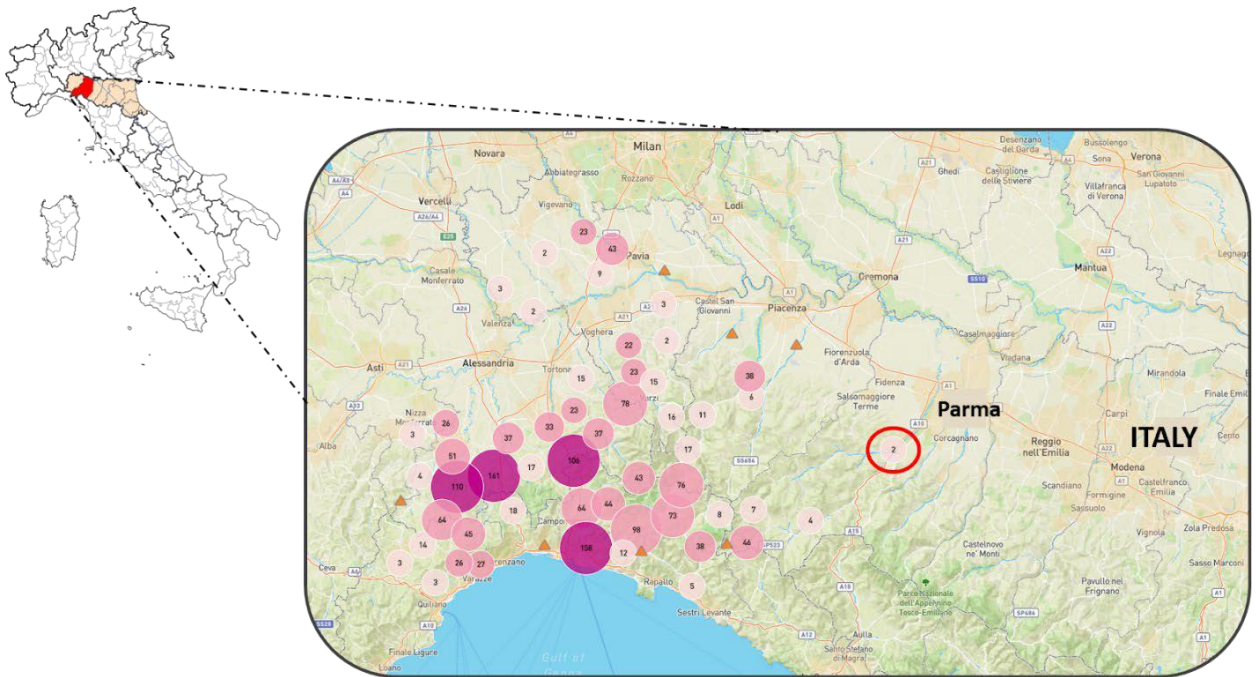
	● Padua, Italy: Local Carabinieri seized 2.5 tons of pork meat contaminated with ASF from China. ● Muang district, Thailand: Ground pork samples obtained during a government raid on unlicensed factories in Nakhon Pathom province tested positive for ASF.
5/7/2025	● ASF in Italy: New outbreaks triggered expansion of restriction zones I and II in Parma province - raise concern regarding international markets response. ● ASF in Bulgaria: first report in domestic pigs since early 2022 ● Crimean-Congo Hemorrhagic Fever: recent report presents evidence of seropositivity in wild board and Iberian pigs. ● CSF in Eastern Russia: first report of the disease since August 2020. <i>Surveillance at Points of Entry</i> ● UK border: physical border checks are implemented for EU-imported medium-risk animal products - days before new biosecurity checks on EU imports were set to begin, over 3.4 tonnes of illegal meat were seized at the Port of Dover.
6/4/2024	● FMD in Brazil: the country self-declared FMD-Free Status Without Vaccination—more than 244 million cattle and buffaloes on around 3.2 million properties will no longer be vaccinated against the disease. ● CSF in Japan: a new outbreak in domestic pigs affected a commercial farm with over 17,500 pigs. ● ASF in animal feed: A study initiated in 2022 investigated the survival of ASFV in 14 plant-derived feed and bedding materials. ● EFSA: The number of ASF outbreaks in domestic pigs increased fivefold compared to 2022, totaling 1929 outbreaks within the EU, primarily driven by outbreaks in Croatia and Romania. <i>Surveillance at Points of Entry</i> ● Taiwan → An Indonesian passenger was deported after bringing a meal containing pork - a quarantine dog detected the pork, leading to a NT\$200,000 (\$6,205) fine. Unable to pay, the traveler was deported.
7/2/2024	● ASF in Germany: A new outbreak was reported in domestic pigs at a farm in Mecklenburg-Western Pomerania, affecting 3,000 fattening pigs. ● ASF in South Korea: About 25,000 domestic swine were culled. ● ASF in Latvia: The first African swine fever outbreak in domestic pigs was reported this year, about 500 pigs were culled. ● PRRS in Trinidad and Tobago: The first occurrence of PRRS was confirmed on a swine farm in South Trinidad. <i>Surveillance at Points of Entry</i> ● United Kingdom: Approximately 882 lbs of illegal meat products, including 172 sheep heads, smokies cutlets, a sheep leg joint, and offal, were seized from two businesses in Reading.
8/6/2024	● African Swine Fever in Germany - another long-distance jump: The affected region is about 250 miles from the nearest ASF-infected area in Germany and approximately 310 miles from the closest infected area in Italy. Genome sequencing suggests a new introduction event. ● ASF in Italy: Six farms affected across four northern provinces. ● Canada expands its ASFV surveillance program: The program will now include wild pigs, with the goal of early detection if ASFV is introduced. ● ASF in Vietnam: Recombinant genotype I/II ASF virus strains detected in Vietnam.

	ASF in The Philippines: Authorities to roll out ASF vaccination by late 2024.
9/3/2024	• African Swine Fever in Germany: The country witnessed ASF affecting its first farm in Rhineland-Palatinate, highlighting the ongoing risk in the region. • Risk to the UK: A government report revealed a high risk of ASF reaching the UK due to illegal pork imports. • ASF in Poland: Internal Security Agency has warned farmers of possible sabotage following mysterious ASF outbreaks in the Kujawsko-Pomorskie province. • ASF in the Philippines: ASF-infected hogs were intercepted at checkpoints in Metro Manila. Two trucks, with over 100 hogs in total, were flagged on Mindanao Avenue. Similarly, 30 ASF-infected pigs were intercepted in Quezon City.
10/1/2024	• African Swine Fever in Italy: Since the first introduction of ASF in 2022, the pig population in the most affected areas has dropped to 43%, causing estimated losses of over USD 130 million. • Sardinia's official ASF-free status: In September, the European Commission officially recognized Sardinia as free from ASF genotype I - different from genotype II, currently circulating in continental Italy and across many European and Asian countries. • Sweden free of ASF: The European Commission officially recognized Sweden as free from ASF a year after the disease was first detected in a wild boar. • The Philippines deploys the ASF vaccine: The first 10,000 vaccinations were administered on backyard farms - AVAC, a Vietnam-based company, is the vaccine provider. • ASF in Russia: Detection of the first recombinant ASF virus (genotypes I and II) in domestic pigs. Surveillance at Point of Entry • The UK → has introduced immediate measures to safeguard against ASF. Personal imports of pork products will be banned starting September 27, 2024. France → Farmers' unions are demanding the mass culling of wild boar along the French-German border to prevent the spread of ASF into France. With the virus detected 50 miles from the border, they urge for a "white zone" where all wild boar are eliminated.
11/5/2024	• ASF Vaccines in the Philippines: The Philippines rolls out an ASF vaccine, focusing on support for backyard pig farmers, who supply 70-80% of the country's pork. Legislators and industry groups are proposing free vaccines to assist these farmers. • ASF vaccines in Ukraine: The Ukrainian Meat Association urges swift approval of the AVAC ASF live vaccine, while the Ukrainian Pig Breeders Association advises caution until it gains international validation. • ASF in Italy: Lombardy intensifies wild boar culling and biosecurity measures against ASF. Over 13,000 wild boars have been culled to date. • ASF in India: Mizoram state declared the ASF outbreak a state disaster and submitted a proposal to increase the central government's cost-share of the outbreak response from 50% to 90%. Surveillance at Point of Entry • The UK: Dartford Council seized 375 lb (170 kg) of illegally imported meat due to ASF risk concerns following an earlier seizure of 3.4 tonnes at Dover - farmers urge more robust post-Brexit border controls. • The Philippines: The Department of Agriculture imposed a temporary import ban on FMD-susceptible animals, products, and by-products from Türkiye due to an FMD outbreak in Kirschir.

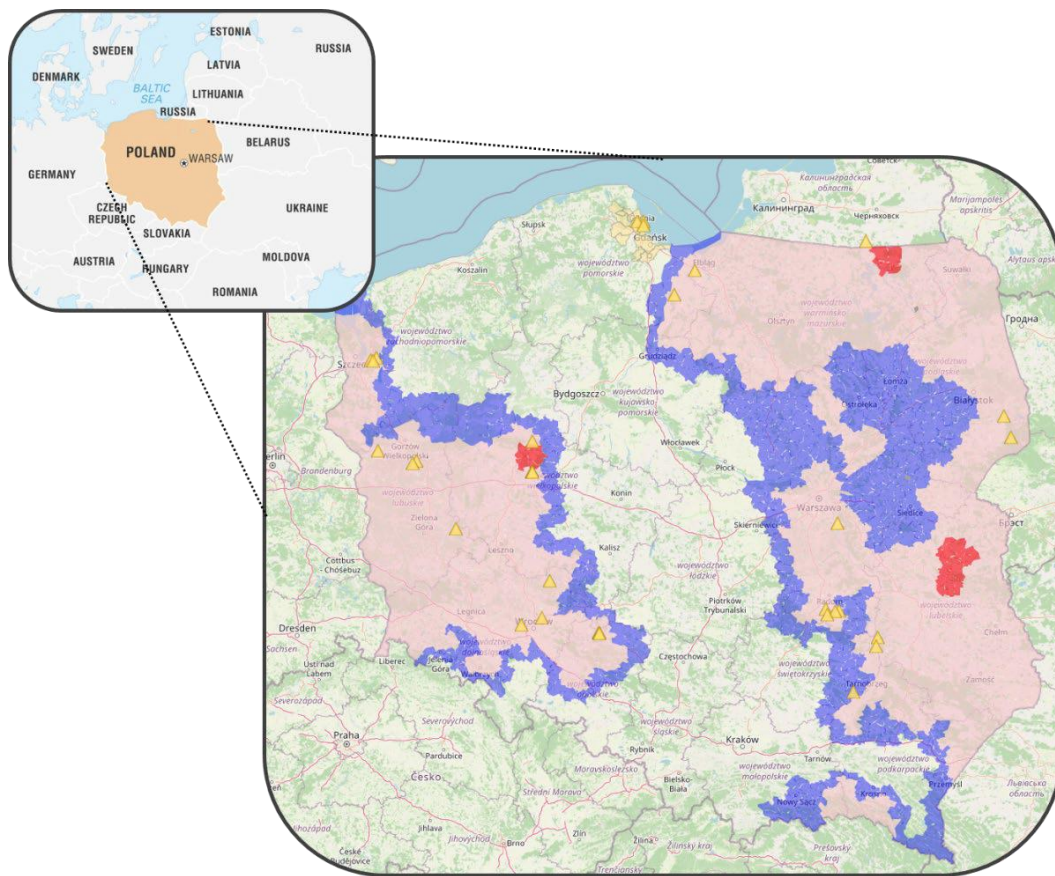
12/3/2024	● New World Screwworm: Following the report in Guatemala in October, the first case has now been reported in Chiapas, Mexico. The USDA is intensifying control efforts to protect U.S. livestock. ● African Swine Fever in Italy: The disease spreads to a new province in the Piedmont region. Alessandria province reported its first case in domestic pigs. ● ASF in the Czech Republic: Authorities aim to replicate the successful eradication achieved in 2017, bolstered by the added support of professional snipers for the control of the wild boar population. ● ASF rise in Vietnam: Nearly 1,500 ASF outbreaks have been reported across over 48 provinces, leading to the culling of 81,030 pigs—2.6 times more than during the same period in 2023. ● ASF in the Philippines: The second phase of the ASF vaccination campaign is set to begin, with 150,000 doses of Vietnam's AVAC modified live vaccine, following the successful deployment of 10,000 doses in Batangas last August. <i>Surveillance at Points of Entry</i> ● Sardinia, Italy: Concerns over ASF have resurfaced in Sardinia just a month after its eradication was declared, following the arrival of a shipment of ASF-infected pork from northern Italy in October.
1/7/2025	● African Swine Fever in Poland: The disease remains prevalent, with 44 outbreaks reported in domestic pig herds in 2024—14 more than in 2023 and 30 more than in 2022. ● African Swine Fever in Sri Lanka: Authorities have confirmed the presence of the disease to WOAH, with 135 outbreaks reported since the initial case on October 25. ● PRRSv "Rosalia" strain in Spain: Studies report promising results in reducing mortality, improving productivity, and lowering production costs. <i>Surveillance at Points of Entry</i> ● UK: Dover Port Health Authority (DPHA) seized over six tonnes of illegal meat, including pork, from ASF-affected regions in Romania during a 14-hour operation.
2/4/2025	● Efforts to prevent African swine fever in France: The French National Swine Health Association will train 600 auditors and conduct 3,000 biosecurity audits, prioritizing small-scale pig and wild boar farms. ● Fresh pork exports from Taiwan to Singapore resumed for the first time in 15 years: This action is a result of Taiwan's recognition as an FMD-free country in 2020 and self-reported as free of ASF. ● ASF in Sri Lanka: Authorities weigh complete depopulation to control outbreak - the total pig population in the country is estimated at 170,000 head. ● ASF in the Philippines: The Department of Agriculture distributes over 32,000 doses of ASF vaccines - with vaccines being administered in 11 municipalities across five provinces. ● Brazil-Singapore Regionalization Agreement for ASF: Brazil has secured an agreement with Singapore to ensure continued pork exports even in the event of an ASF outbreak.
3/4/2025	● African Swine Fever in the Philippines: The Department of Agriculture announced plans to seek commercial approval for Vietnamese AVAC vaccines in the Philippines, with the government-run vaccine initiative ongoing. ● Foot-and-Mouth Disease in Germany: Restrictions eased as no new cases were reported. If no further outbreaks occur, Germany could regain its FMD-free status after three months, allowing the removal of trade restrictions on meat and dairy products.

	• Japanese Encephalitis in Australia: first outbreaks confirmed in swine since July 2022 in South Queensland. • Surveillance at the Point of Entry • United Kingdom: German imports of meat and dairy products entered the UK despite a ban due to the FMD outbreak in Germany.
4/1/2025	• FMD in Hungary: The first FMD outbreaks in over 50 years have been confirmed at two large dairy farms near the Slovakian border. • FMD in Slovakia: Five FMD outbreaks confirmed near the borders with Hungary and Austria - over 6,750 animals culled. • FMD in Germany: FMD-free status regained in nearly the entire country. Germany has successfully recovered from an FMD outbreak reported on January 10, involving a single herd of water buffalo in Brandenburg—the country's first in nearly 40 years. • FMD in South Korea: First reports of FMD since May 2023 - authorities have moved forward the nationwide FMD vaccination schedule to this month instead of July as earlier planned.
5/6/2025	• FMD in Europe: New outbreaks in Hungary and Slovakia prompt heightened surveillance in neighboring countries. • ASF in Europe: Outbreaks surge in Moldova and Romania compared to 2024 records. • FMD in South Korea: Authorities confirm 16th outbreak since mid-March amid ongoing wave following last report in May 2023. • New serotype of FMD reported in the Near East: FAO issues alert as FMD Serotype SAT1 is confirmed in Iraq, Bahrain, and Kuwait since early 2025. • Surveillance at point of entry in the UK: Nearly 60 tonnes of illegal meat were seized at Dover in the first quarter of 2025, raising alarm over the high risk of disease introduction, such as ASF and FMD.
6/3/2025	• FMD in Europe: Germany's FMD-free status has been reinstated. Slovakia and Hungary have not reported any further outbreaks. • FMD in Türkiye: First FMD SAT1 outbreak since 1965. • FMD in Latin America: The WOAHA has officially recognized Brazil and Bolivia as free of FMD without vaccination. • New World Screwworm (NWS) in Central America: Reported in cattle in Veracruz, prompting USDA Secretary Brooke Rollins to suspend imports of live cattle, horses, and bison from Mexico.

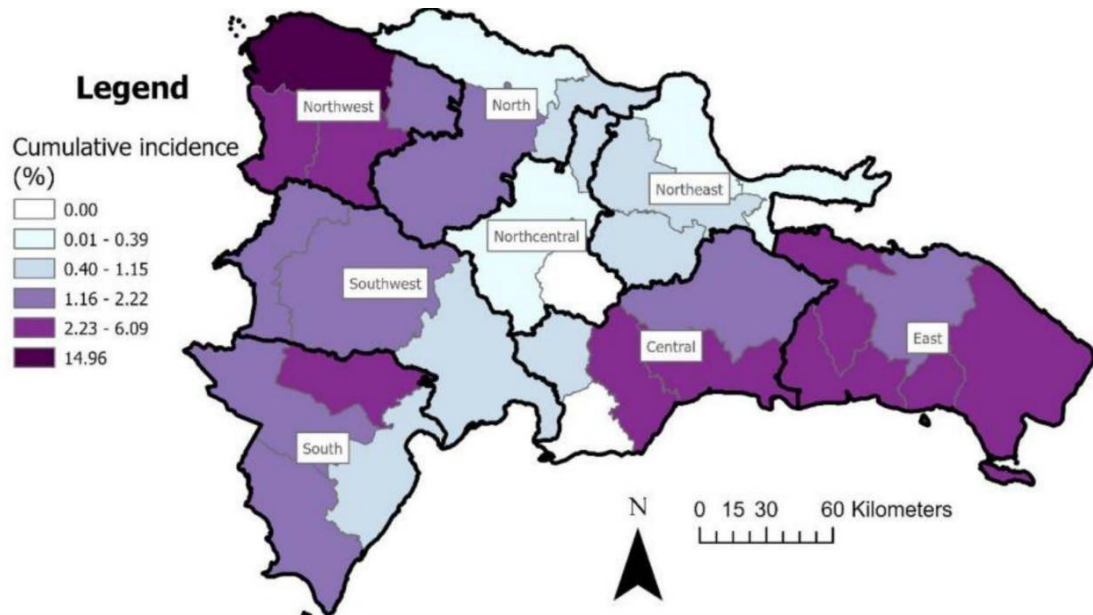
Some examples of the maps produced in the reports are found below:



The distribution of African swine fever outbreaks in Liguria since January 2022 and Emilia Romana, since, more recently, November 2023, northern region in Italy (in shades of pink: outbreaks reported to WOA since January 2022 ($n=1281$); within the red circle: outbreak in Fornovo di Taro and Varano de Melegari).



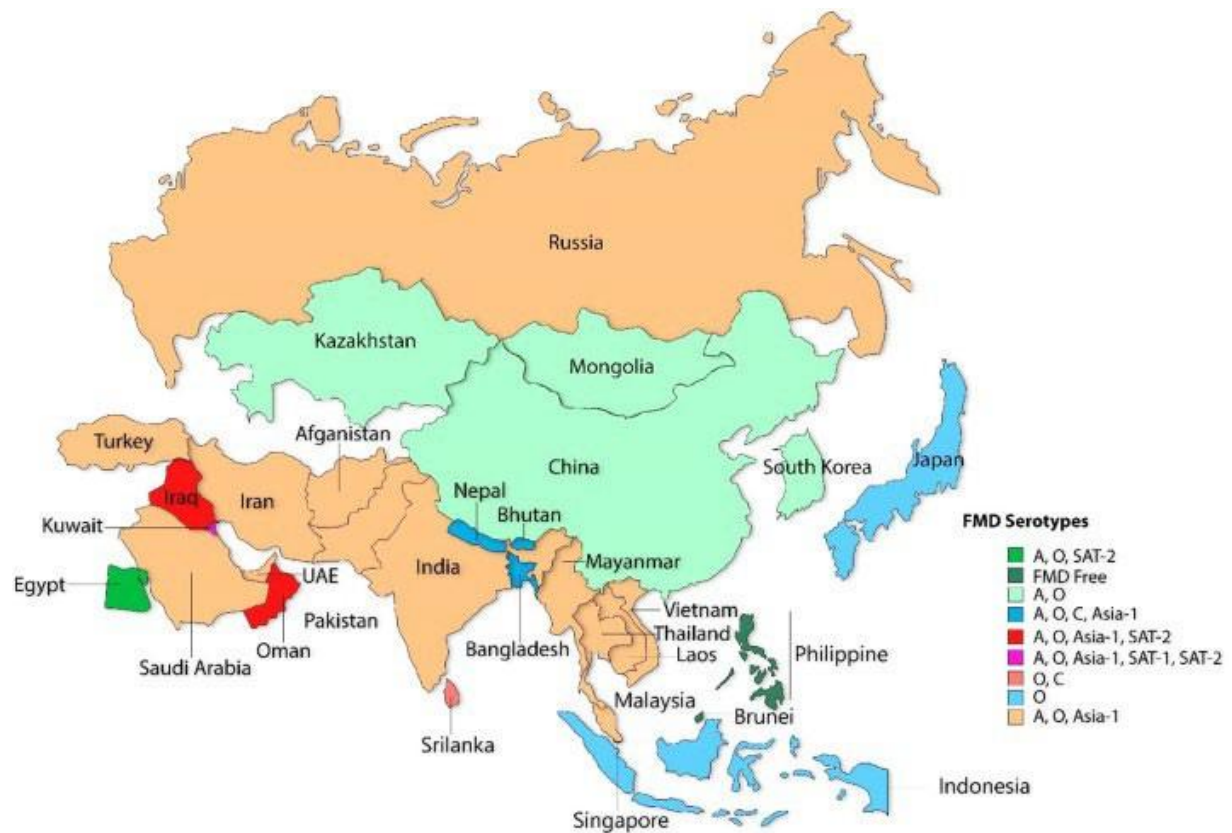
The distribution of African swine fever outbreaks in wild boar and zoning in Poland (in red: restricted zone III; in pink: restricted zone II; in purple: restricted zone I; yellow triangle: ASF outbreaks in wild boar) as of May 17, 2024 (Source: [Chief Veterinary Inspectorate](#))



Cumulative incidence (%) for provinces in the Dominican Republic considering outbreaks of African swine fever from January 2023 to March 2024. (Source: Nature Scientific Report [LINK](#)).



Distribution of outbreaks in Slovakia and distance between the fifth and the first four outbreaks (April 2025) (Sources: [WAHIS](#))



FMD Serotypes in Asia as of January 2025.

Objective 2: Expand coverage of productive diseases

- Extraction of scientific and gray literature enabled development of **Dashboard 1.0**, summarizing productive diseases globally.
- Literature inputs were integrated into regional disease profiles and “Focus On” sections.

Objective 3: Deep-dive epidemiological analyses

Local experts contributed to contextual analyses on:

- ASF zonation strategies in Romania
- Evolution of surveillance and compensation mechanisms in the Dominican Republic
- Monitoring of recombinant ASF strains in Vietnam
- FMD serotype circulation patterns and implications for risk assessment

Objective 4: Evaluate AI-enabled surveillance tools

- First systematic assessment completed, identifying:
 - High sensitivity but **variable reliability**
 - Performance shifts following algorithm updates
 - Challenges in verifying source provenance
 - Opportunities to complement—not replace—traditional surveillance
- Early results shared at **SAVY 2.0 (2025)**.

Objective 5: Strengthen global collaborations

- Network expanded to **50+ countries**, enabling improved access to near real-time soft data.
- Highest engagement observed in Eastern Europe, the Caribbean, Central America, and selected African countries.

Discussion:

The global landscape of transboundary swine diseases is more complex today than at any point since the launch of this project in 2017. ASF continues to evolve across key regions, FMD serotype dynamics demand vigilant monitoring, and productive diseases continue to impose substantial economic losses in areas with emerging swine value chains. At the same time, erosion of early-detection systems in low- and middle-income countries increases the likelihood that high-impact pathogens may circulate unnoticed long enough to threaten the U.S. industry.

This year demonstrated the value of maintaining a trusted hub of verified, contextualized information. As AI-enabled event-based surveillance tools proliferate, their outputs—while promising—are not yet sufficiently reliable to stand alone. The U.S. swine sector benefits from an approach that pairs technological innovation with expert epidemiological review, ensuring accuracy, transparency, and practical interpretation.

Risk-based analysis remains fundamental. By routinely integrating regional context, strain information, animal-movement patterns, and policy changes, the system enhances preparedness and supports producers' ability to make informed decisions.

Finally, producer engagement remains strong, as evidenced by more than 8,000 annual page views, making this the second most visited section of the SHIC website. Sustained interest reinforces the importance of continuing this work, particularly as the global risk environment intensifies.

Revised 1/25