An overview of CAHFS international research and activities supporting ASF prevention and control and veterinary capacity building

Center for Animal Health and Food Safety (CAHFS), University of MN

GARA, Manila, Philippines, 2023

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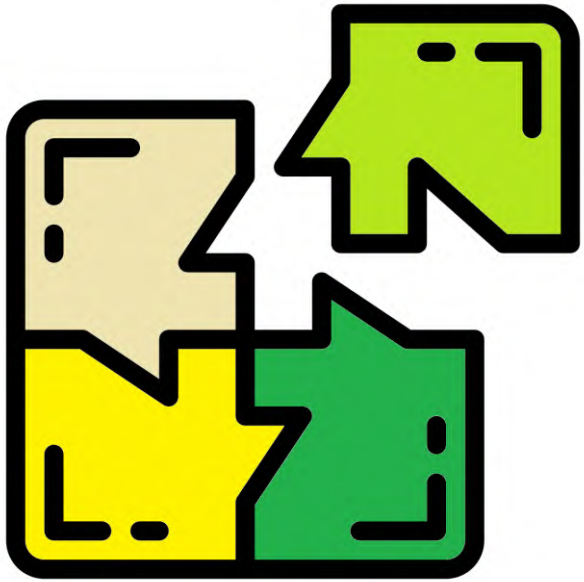
Outline

- ProgRESSVet capacity building program
- Outbreak analysis – Dominican Republic
- Point-of-care test evaluation



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Connecting **Minnesota** and the **World** to develop solutions to shared challenges in **veterinary public health**

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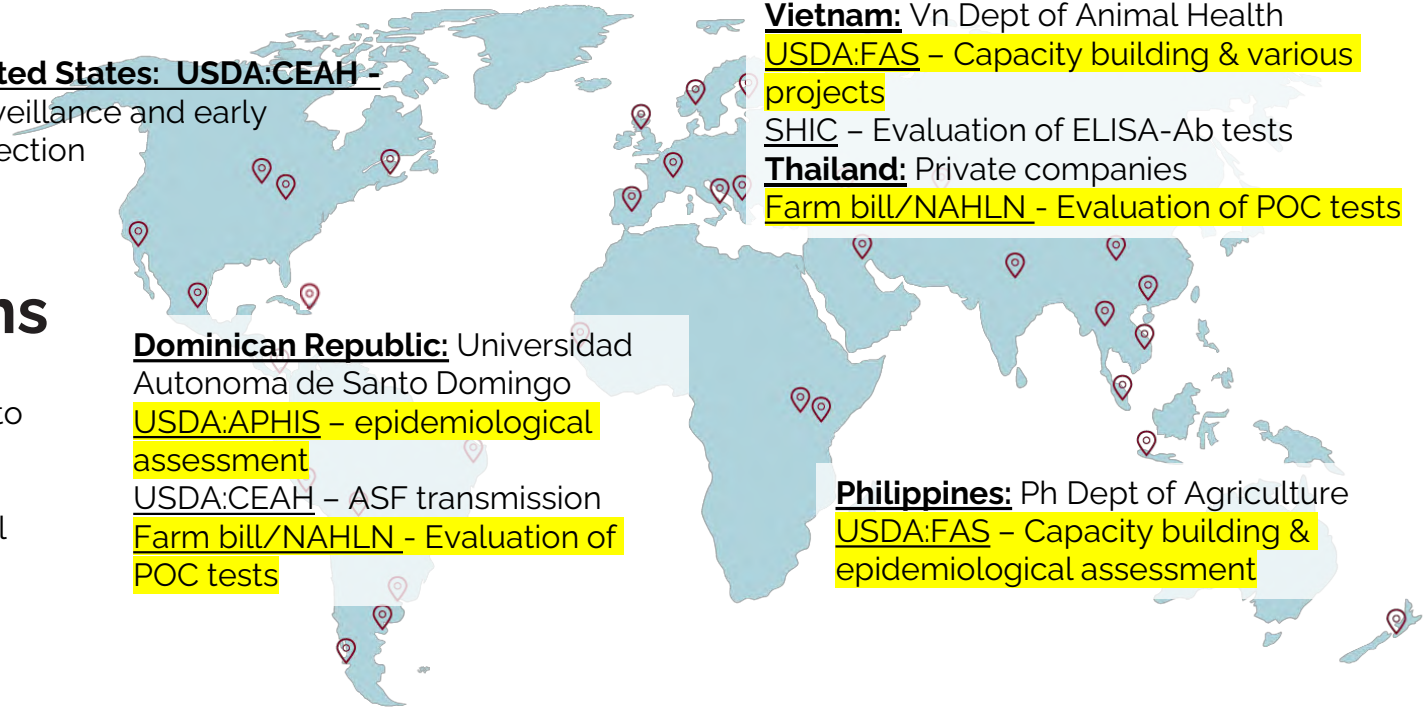
Food and Agriculture Organization of the United Nations

Global ASF Collaborations

USDA:ARS - Collaboration to build US capacity on epidemiology of ASF and other transboundary animal diseases



United States: USDA:CEAH - surveillance and early detection

Dominican Republic: Universidad Autonoma de Santo Domingo
USDA:APHIS – epidemiological assessment
USDA:CEAH – ASF transmission
Farm bill/NAHLN - Evaluation of POC tests

Vietnam: Vn Dept of Animal Health
USDA:FAS – Capacity building & various projects
SHIC – Evaluation of ELISA-Ab tests

Thailand: Private companies
Farm bill/NAHLN - Evaluation of POC tests

Philippines: Ph Dept of Agriculture
USDA:FAS – Capacity building & epidemiological assessment

ProgRESSVet

Dr. Mary Katherine O'Brien, PhD

ProgRESSVet is a training program, delivered predominantly online, to enhance the capabilities of human resources of Veterinary Services.

The program is based upon the WOAH's Advanced Competencies for veterinary service professionals, and seeks to enhance both the knowledge and skills necessary for advanced practice in veterinary services. Past and present iterations include:

- ProgRESSVet Latin America (2016-2018)
- ProgRESSVet East Africa (2018-present)
- **ProgRESSVet South East Asia (2019-present)**
- ProgRESSVet Colombia (2020-present)
- APCOVE South East Asia (2020-2021, consortium partner)

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ProgRESSVet Philippines

Capacity building in risk assessment to support safe international trade of U.S. pork products in the Philippines and Vietnam

"The main goal of this project is to strengthen local veterinary services capacities to detect and control animal diseases, and to understand and apply international standards for trade of animal products."

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National Pork Producers Council™

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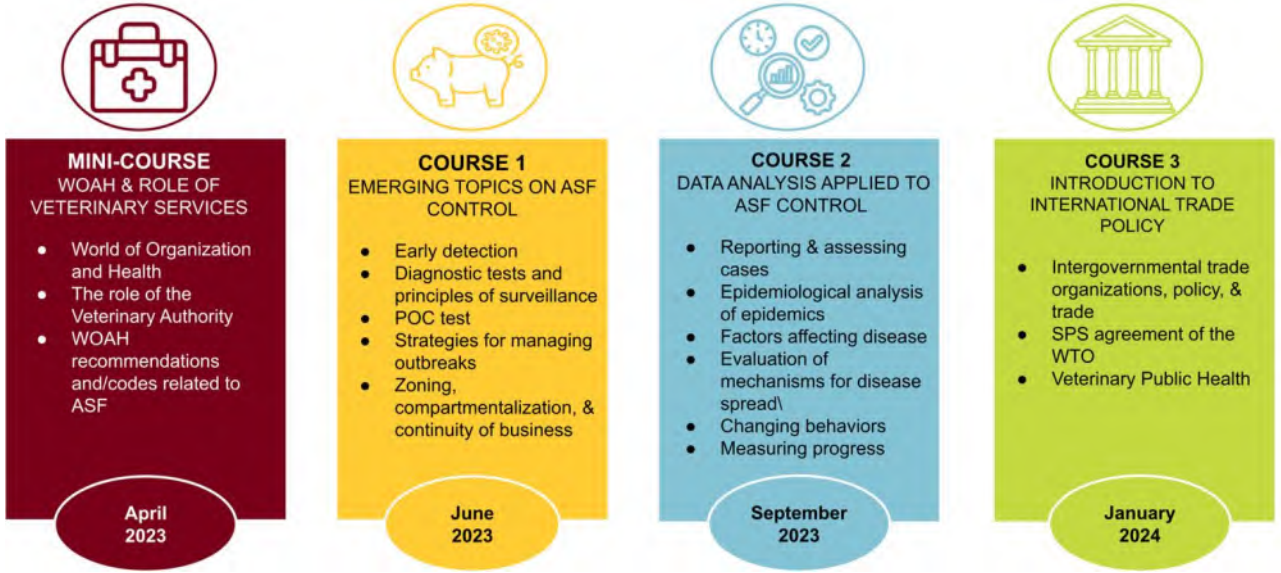
ProgRESSVet VIETNAM

ProgRESSVet PHILIPPINES



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Open Access Article

Factors Affecting the Spread, Diagnosis, and Control of African Swine Fever in the Philippines

by Chia-Hui Hsu [1,*], Rachel Schambow [1], Maximino Montenegro [2], Ruth Miclat-Sonaco [3] and Andres Perez [1]

- Workshop organized by International Training Center on Pig Husbandry (ITCPH) in May 2023.
- 25 veterinarians in discussed clinical presentation and risk factors relating to ASF spread in the Philippines
    - Quantitative and qualitative activities: Conjoint analysis, Strengths Weaknesses Opportunities and Threats analysis, world café discussions
- Most important factors for ASF introduction were **swill feeding**, **movement of personnel without proper biosecurity**, and the **absence of disinfection protocols**

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Table 5. Summary of SWOT results from world café discussion.

Strengths	Weaknesses
1. National Control Policy and ASF task force. 2. Collaboration between different levels of government (central level and local governmental units). 3. Evidence-based approach. 4. Philippines Statistics Authority has a regular report of inventory of swine and farmers, including type of production.	1. Farmers face difficulties due to the absence of adequate compensation and a lack of trust in the government's support. This leads to resistance to reporting ASF cases due to the absence of incentives and negative public opinion. 2. The value chain lacks an established traceability system, making it difficult to track and map the routes of hog traders (viajeros), which hinders effective control measures. 3. Lack of resources. There are significant resource constraints in terms of manpower and testing capacity. Limited manpower affects the implementation of control measures, and although the testing capacity has improved, the efficiency of diagnostic PCR testing (RADDL) results in delayed reporting, which hampers timely control efforts.
Opportunities	**Threats**
1. Social media such as Facebook fan page or TikTok for dissemination of ASF prevention information. 2. Rapid adoption of responsible technology in diagnostics. 3. Environmental compliance and regulatory practices for related industries. 4. Recent vaccine trials. 5. Improvement in the execution of biosecurity measures and culture.	1. Risk factors such as human/trade movement and vectors in the Philippines. 2. Dwindling number of new swine veterinarians. 3. Issues with slaughterhouse compliance, tampering with documents, and border control corruption. 4. Time to detection of ASF.

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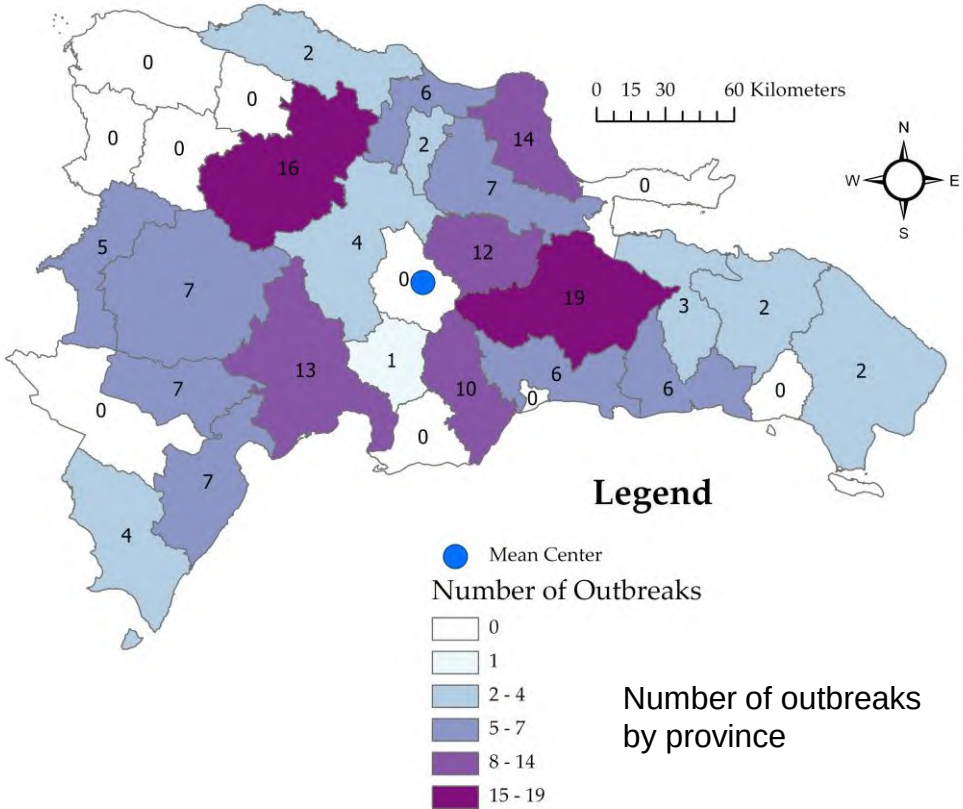
Open Access Article

Epidemiological Assessment of African Swine Fever Spread in the Dominican Republic

by Rachel A. Schambow [1,*], Syed Hussain [1], Maria C. Antognoli [2], Silvia Kreindel [2], Raysa Reyes [3] and Andres M. Perez [1]

- 155 outbreaks from November 2022 to June 2023, provided by DR gov
  - Passive reports verified by veterinary authority
- 121 backyard, 30 commercial non-technical (CNT) and 4 semi-technical (ST) farms



Number of outbreaks by province

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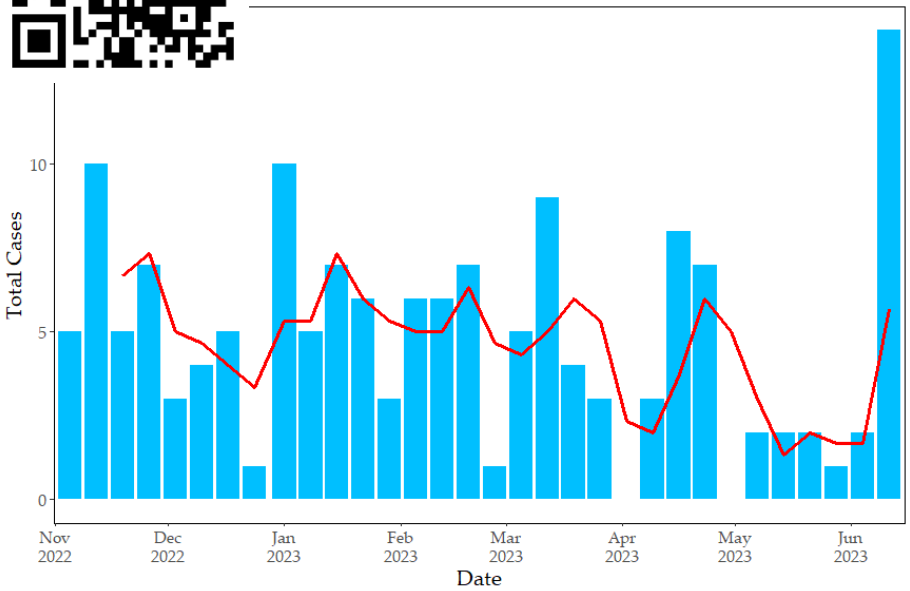
Epidemiological Assessment of Outbreaks in Dominican Republic

Weekly number of African Swine Fever outbreaks (blue bars) and 3-week moving average (red line), 11/11/22 to 6/17/23



- Knox test: significant clusters at small cutoff values
- Space-time permutation model: 9 sig clusters with max radius 2.23 km
- Outbreaks amongst neighboring backyard farms
- Between farm R0 estimating using doubling method
  - Nearing 1 at end of time period even when assuming long farm infectious period (R0=1.31 when D=40 days)

Point-of-care tests: Opportunities & challenges

Dr. Sylvester Ochwo, DVM, PhD

Rapid detection
Supports timely decision making

Early detection
Immediate intervention, reduced ASF spread

Accessibility and reduced sample transportation time & cost

Simplicity and skill level
User-friendliness & non-technical users

Validation Challenges
No clear guidelines for field validation

Insufficient Data and Emphasis on Accuracy

Regulatory and Monitoring Issues
Laws and regulation are lacking

Purpose and Operational Factors
Fitness for purpose and operational features are often ignored

Point-of-care test assessment tool: FIT-REASSURED

- **R** **Real-time Connectivity**
- **E** Ease of sample collection
- **A** **Affordability**
- **S** Sensitivity
- **S** **Specificity**
- **U** User-friendliness
- **R** **Rapidity and robustness**
- **E** Equipment-free operation
- **D** **Deliverability**

Dr. Sylvester Ochwo, DVM, PhD

ORIGINAL RESEARCH article
Front. Vet. Sci., 31 August 2023
Sec. Veterinary Epidemiology and Economics
Volume 10 - 2023 | https://doi.org/10.3389/fvets.2023.1239111

Beyond accuracy: leveraging ASSURED criteria for field evaluation of point-of-care tests for food animal diseases

Sylvester Ochwo* Andres M. Perez María Sol Pérez Aguirreburualde

Center for Animal Health and Food Safety, College of Veterinary Medicine, University of Minnesota, Saint Paul, MN, United States

- Field evaluation of usefulness and accuracy of ASF point-of-care tests is ongoing in the Dominican Republic
- IndiField™ portable real-time PCR

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Summary

- ProgRESSVet helps build capacity in veterinary epidemiology to support ASF control and create partnerships for international research projects.
- With the help of in-country partners, data have been collected and used for analysis in the Philippines and Dominican Republic.
- Point-of-care tests should be evaluated using multifaceted criteria (FIT-REASSURED), and field evaluation for IndiField™ portable real-time PCR is ongoing.

Thank you! Questions?

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