

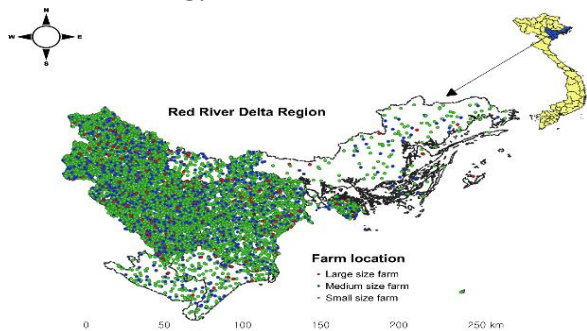


Background

- In Vietnam, the first African swine fever (ASF) outbreak was reported in February 2019. Since then, the disease has spread quickly across the country.
- Simulation models are a useful tool for decision-makers to evaluate the impact of outbreaks as well as to identify and evaluate cost-effective control strategies.

Our innovative approach

- Farm movements and modelling parameters were estimated through farm survey.
- We modelled ASF transmission in domestic farms (2,000) in the Mekong Delta Region, Vietnam using different scenarios by adjusting model parameters.
- What-if scenarios estimated the impact of movement control strategy scenarios.

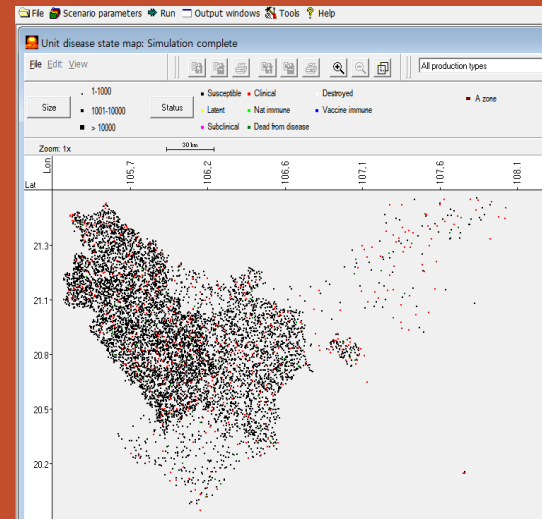


A simulation model for African swine fever (ASF) in domestic pigs and evaluation of movement control strategies in Vietnam

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- This study offers valuable insight into how ASF virus can be transmitted via direct and indirect contact and controlled
- Strict movement control and high standards of biosecurity can contribute to the reduction of disease spread



Screenshot of simulation model


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Outcomes

- The enforcement of movement restrictions is an effective control measure if implemented as soon as outbreaks are confirmed.
- To be effective, movement restrictions need to reach at least between 50% and 75% of the population, and they need to be applied in a timely manner.

Summary of movement restriction scenarios

Scenario	Movement control	No. of mean infected farms (5 and 95 percentiles)				% change in the number of median infected farm
		Overall	Small	Medium	Large	
A1	Baseline	7,640 (6,729-7,790)	5,231 (4,433-5,358)	2,084 (2,018-2,102)	324 (276-345)	NA
MC1	25%	6,171 (0-6,950)	3,934 (0-4,615)	2,005 (0-2,075)	231 (0-273)	-19.23%
MC2	50%	1,231 (0-3,071)	639 (0-1,679)	560 (0-1,298)	35 (0-93)	-83.89%
MC3	75%	30 (0-159)	15 (0-79)	14 (0-77)	1 (0-4)	-99.62%
MC4	100%	1 (0-3)	0 (0-2)	0 (0-2)	0 (0-1)	-99.99%

Future steps

- The findings of this study provide the basis for a cost-benefit analysis of control strategies in Vietnam
- This simulation model can be applied to other regions or countries with modified parameters

Partners



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