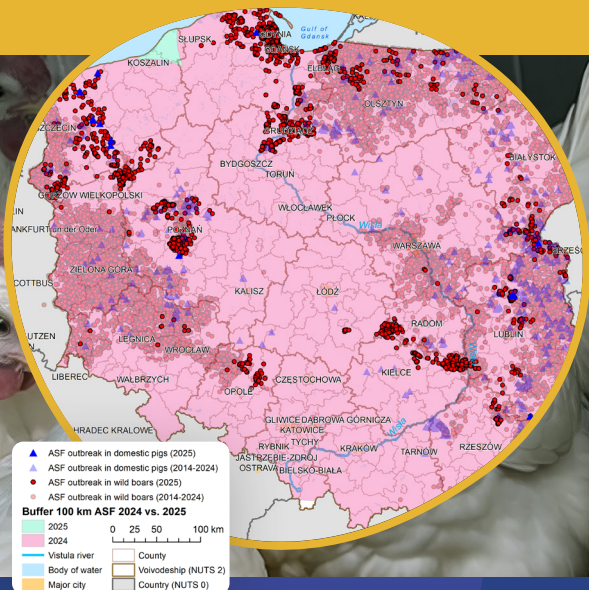




European Partnership on
Animal Health and Welfare

STM_s Short-Term Missions Case Study

The EUP AH&W provides small grants for Short-Term Missions (STMs) with the aim of sharing scientific expertise, methodologies, equipment, and facilities to harmonise the existing approaches and methodologies within the large EUP AH&W. They aim to drive research forward in a collaborative and non-duplicative fashion to strengthen both the scientific capacity within the EUP AH&W and promote Animal Health and Welfare across Europe. Additionally, STMs serve as a platform for creating and consolidating professional networks, fostering mutual trust among researchers and institutions, and establishing a strong foundation for future collaborative efforts.



Title: **Collaborative Modelling and Risk Assessment of Avian Influenza and ASF in Poland**

EUP AH&W Thematic area: Surveillance/monitoring systems and risk assessment of animal health and welfare, Procedures, methodologies, and tools to assess animal health and animal welfare.

Home Institute: University of Surrey (UoS), UK

Mission hosting institute: Polish National Veterinary Research Institute (PIWet), Puławy, Poland.

Duration of mission: 1 week.

Summary

The STM aimed to refine existing models for disease surveillance of two significant threats to European agriculture, African Swine Fever (ASF) and Highly Pathogenic Avian Influenza (HPAI). It also aimed to assess the feasibility of applying these methodologies to wider geographic contexts, and to facilitate knowledge exchange by combining the data modelling expertise from UoS with the comprehensive data streams and practical veterinary experience from PIWet.

During this STM, the awardee carried out a deep dive into the available Polish data to model ASF in the region, which was found to be sufficient quality to support high-resolution spatial-temporal modelling, and able to be correlated with environmental and ecological factors to create more detailed risk maps. A consideration for future models was identified, with a need to adjust for surveillance effort bias, crucial for accurate risk perception. A specific molecular dataset was examined to discuss the utility of the data for understanding strain virulence and transmission pathways, and key limitations were identified in the Polish dataset, that are required for the current ASF model, before it can be applied to a wider European context. A review of the mapping of the current HPAI model identified elements that required expansion, to further investigate factors of transmission and analyse control strategies for effectiveness and costs. During this STM the awardee organised and led workshops and tutorials on the application of spatial-temporal modelling and individual modelling in epidemiological data and its uses. A new collaboration opportunity with the host was identified for diagnostics and surveillance of Porcine Reproductive and Respiratory syndrome (PRRS) in disease absent settings.

This STM successfully launched a long-term collaboration with two EUP AH&W partners, who aim to continue to formulate methodology, exchange data, and develop advanced models, that ultimately help European authorities make faster and smarter decisions to protect animal health and support the One Health approach.



“ My Short-Term Mission was a pivotal experience in my career as an early-career researcher in epidemiology. While remote collaboration is possible, the ability to visit an institute and conduct group meetings gave me great insight into their current activities, accessing their raw data, and discussing the nuances of their local disease landscape. It is an excellent example of how the EUP AH&W partnership breaks down silos, allowing multidisciplinary expertise to be shared freely across borders to strengthen Europe's collective biosecurity. ”

Dr Mahbod Entezami
Post-graduate researcher

