



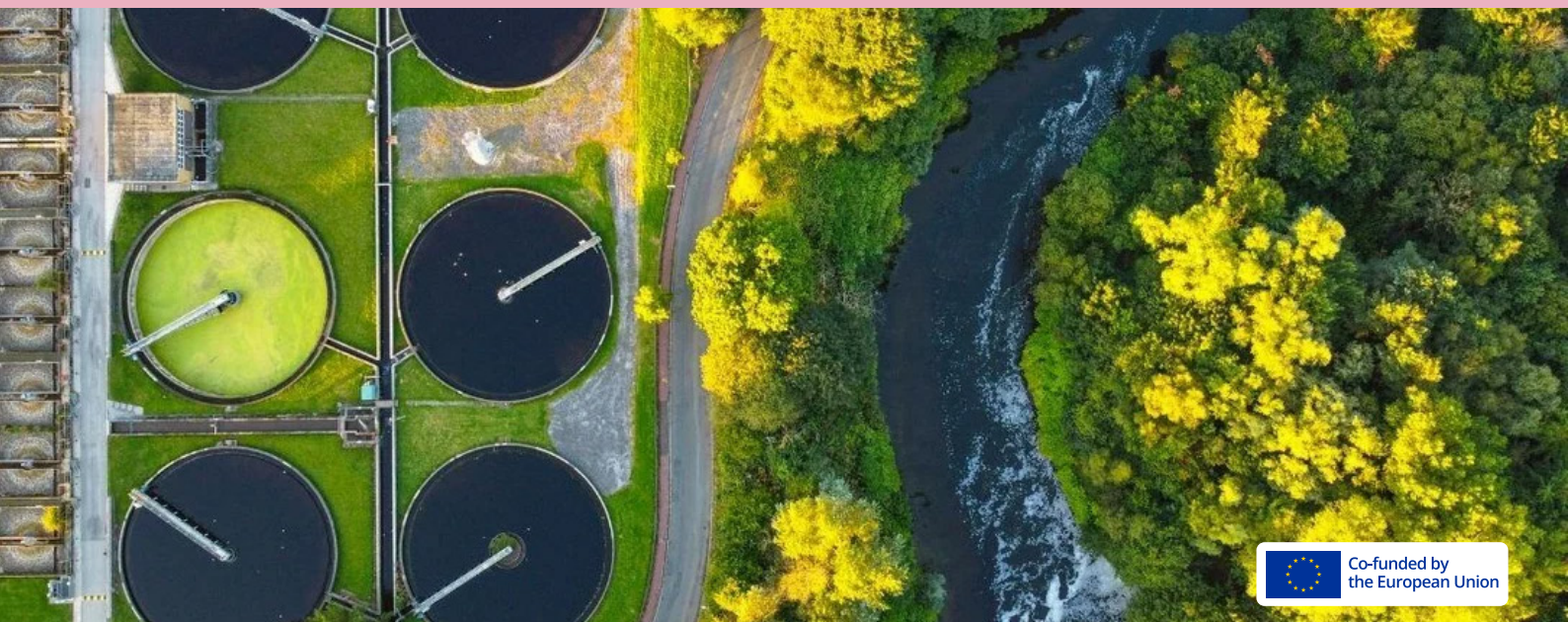
European Partnership on
Animal Health and Welfare

STMs

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: **Epidemiological tools in the study of environmental antibiotic resistance dissemination: a case study on aquaculture in Denmark**

EUP AH&W Thematic area: Surveillance and risk assessment of animal health and welfare; tools and methods to assess them; and management and husbandry guidelines on farm (including aquaculture), during transport and at slaughter.

Home Institute: Centro de Investigación en Sanidad Animal (CISA) – Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA) – Consejo Superior de Investigaciones Científicas (CSIC), Spain

Mission hosting institute: Technical University of Denmark (DTU) – National Food Institute, Denmark

Duration of mission: 14 days (9th to 22nd of June 2025)

Summary

This Short-Term Mission (STM) strengthened scientific collaboration between the Spanish (CISA-INIA-CSIC) and Danish (Technical University of Denmark, DTU) EUP AH&W research teams. The goal of the STM was to test and validate a digital tool, called an epidemiological dashboard, to study how antibiotic resistance (AMR) spreads from human activities into the surrounding environment.

Using the dashboard, the team created maps showing potential sources of AMR in the environment and wildlife samples tested for AMR. The maps displayed the wildlife sampling locations and identified surrounding AMR sources such as wastewater treatment plants, river sections located within 10 km of wastewater treatment plants, and farmland fertilised with manure or sludge. This allowed them to compare areas with more or less human influence on the environment and see how AMR levels might differ.

The work conducted during the STM also helped improve the dashboard tool's functionality, optimising it for future studies that track how AMR spreads in the environment. These improvements will support future AMR monitoring and risk assessment studies, including those related to fish farming (aquaculture), livestock and wildlife in Denmark and other countries.

Overall, this mission successfully strengthened cooperation between the Spanish and Danish teams and advanced their joint research under the EUP AH&W. The team plans to present their findings at the 10th AMR Conference in 2026, and to the Danish Veterinary and Food Administration. A scientific paper written during the mission brings together key findings on antibiotic-resistant bacteria and genes, following up on the European Food Safety Authority's 2021 report about how the environment contributes to the spread of AMR through the food chain. The paper will be submitted to a top-ranked scientific journal.

“ This STM was a great opportunity to meet in person and work closely with our SOA8 partners at DTU, establishing strong professional and personal bonds. I personally benefited greatly from the opportunity to learn more about the Danish culture, work ethic and the study of AMR in the environmental. Being able to establish in person meetings was key to promoting knowledge exchange and the sharing of different experiences in the field of AMR. Different countries have varying scenarios when it comes to spatial epidemiology and the study of AMR. I am very thankful for this great personal and professional opportunity provided by the WP5 Short-term mission programme 2025, and I highly recommend it!”

Dr Ana Carolina Ewbank –
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Researcher (CISA-INIA-CSIC)

