

Master theses proposals

WOAH – DID

Academic year 2025-2026

The World Organisation for Animal Health (WOAH, formerly OIE) is an intergovernmental organisation founded in 1924, coordinating, supporting and promoting animal disease control. The primary objective of WOAH is to control epizootic diseases and prevent their spread. Further objectives include the sharing of transparent, scientific information; international solidarity; sanitary safety; and the promotion of veterinary services, food safety and animal welfare.

The Data Integration Department (DID) at WOAH is a recently established unit that brings together and coordinates the organisation's data-related activities. Its creation reflects WOAH's strategic recognition that data are central to international animal health governance, both for monitoring global animal health and for supporting evidence-based decision-making.

Broadly, the DID has four main areas of work, supported by dedicated (and sometimes overlapping) teams:

- The Observatory of Norms and Standards: Monitors and analyses how WOAH Members implement international animal health standards. Provides evidence to inform and improve the standard-setting process.
- Epidemic Intelligence: Collects, integrates, and analyses diverse data sources (official reports, non-traditional sources, event-based surveillance) to detect, monitor and forecast the evolution of animal health events worldwide.
- Economic value: Builds on the Global Burden of Animal Diseases (GBADs) initiative to quantify the societal and economic impacts of animal health, welfare, and production losses.
- Data Science and Innovation: Works on data interoperability, integration, and dissemination to make information more accessible and usable. Explores and applies advanced analytical methods (including statistical modelling, and AI/ML approaches) to improve insights from WOAH data.

The Data Integration Department is offering **a series of MSc thesis projects** for motivated students interested in **global animal health data, analytics, and policy**. Projects will run for a minimum of four months, with flexibility **between December 2025 and October 2026**, and will require students to be **available on-site in Paris**, France. Based at WOAH's headquarters in the historical centre of Paris, students will benefit from a truly international environment, close supervision by WOAH experts, and exposure to a wide professional network of scientists, policy-makers, and partner organisations. These projects offer an exceptional opportunity to gain hands-on experience at the interface of science, data, and global policy, while contributing to work with tangible global impact. An **internship allowance** will be provided to support students during their stay. Interested candidates are invited to contact **Dr G. Guillot, Head of Department** (g.guillot@woah.org) for further information.

Title: Mapping and assessing dataset for Rapid Risk Assessment in animal health emergencies

WOAH domains(s) – Epidemic intelligence

Academic Domain(s): epidemiology, statistics, data science

Rationale - Assessing the quality and suitability of datasets used in Rapid Risk Assessment (RRA) is a fundamental component of WOA's epidemic intelligence framework and it is linked to WOA Incidence Management System. With the increasing availability of animal health data sources, critically evaluating and selecting datasets for completeness, accuracy, timeliness, and relevance is essential to ensure that RRAs are robust, credible, and actionable. This thesis would contribute to strengthening WOA IMS by mapping datasets and exploring methods and criteria for dataset assessment, with a focus on supporting early warning and response to transboundary animal diseases.

Title: Leveraging Large Language Models to detect emerging animal health threats through Media scanning

WOAH domains(s) – Epidemic intelligence

Academic Domain(s): data science, epidemiology, AI

Rationale - As the volume of digital information rapidly grows, traditional surveillance methods alone are often insufficient to capture early signals of emerging animal health threats. This thesis would explore the potential of LLMs to enhance epidemic intelligence by analyzing unstructured media data collected via EIOS, improving the identification, classification, and prioritization of relevant signals. By assessing the effectiveness and added value of LLMs in supporting early warning, the project would contribute to timely detection of transboundary animal disease threats .

Title: Impact assessment of WOA vaccine bank program using artificial intelligence-based tools

WOAH domains(s) – Data Science, Observatory

Academic Domain(s): Data Science

Rationale - The current system for collecting requests for WOA vaccine bank is based on submission of questionnaires in Word or PDF format by Members through emails. This method poses challenges for efficient data extraction, timely analysis, and centralised reporting. This project aims to lay the foundation for advanced data analysis, reporting, and impact measurement using AI (or LLM) tools, enhancing the responsiveness and effectiveness of the

vaccination bank's operations. This project involves Science Department, Regional Activity Department and Engagement and Investment Department.

Title: Statistical analysis of WOAAH standards uptake

WOAH domains(s) –Data Integration

Academic Domain(s): Data science, Statistics

Rationale: The Observatory publishes monitoring reports (OMR) that describe the uptake of WOAHA standards in the field of animal health and welfare by its members (countries, regions).

The project consists in a combination of the following work streams: (a) supplement the existing OMR data and data analyses with additional public datasets; (b) re-analysing the latest observatory data to assess the uncertainty attached to the various indicators reported; (c) developing statistical models to identify the main variables associated to the uptake of standards (or lack thereof); (d) co-design an ad-hoc study aimed at validating the

Title: The non-take-up of recognition of disease-free status

WOAH domains(s): Data science, Statistics, Status

Academic Domain(s): Statistics, Animal Health

Rationale: Since 1998, the World Organisation for Animal Health has the mandate from the WTO to officially recognise disease-free areas of countries for trade purposes. The procedure for the official recognition of animal health status by WOAHA is voluntary and applies currently to six diseases.

There is evidence that several countries have been free from diseases but did not take the step to apply for the disease-free status to WOAHA. The goal of this MSc project is three-fold:

- a) Quantify and characterise this phenomenon from the WOAHA dataset;
- b) Study the statistical association between the non-take up and various variables characterizing the animal health, trade and regulatory landscape;
- c) Design an open-ended questions survey aiming at understanding the reasons behind the non take-up.

Methods, tools: data analytics with R or python, descriptive statistics, statistical modelling, survey theory, social science

Title: Contextual analysis of national legislations relevant to animal health and welfare

WOAH domains(s) – Data science, Statistics, International standards

Academic Domain(s): Data science, Veterinary legislation and regulation

Rationale: National legislations and regulations related to animal health and welfare are the key outputs of the implementation of WOAHA standards by its Members. However, the systematic collection of data concerning such legislations has been considered infeasible unless Members would analyse and report to WOAHA on their own costs. This is because it would require contextual analysis of legislative texts in multiple languages, referencing texts in Codes and Manuals.

This project aims to develop a new tool that enables WOAHA to proactively identify relevant legislations and regulations using the latest technological advancements. In the immediate term, the tool will contribute to refining the current set of Observatory Monitoring Indicators. In a longer term, it has a potential to scale up and serve for WOAHA's active assessments of technical areas where its standards and services may need improvements.

Methods, tools: The main activity of the project is to develop an optimal system prompt to LLM that enables contextual analysis of title and abstract of national legislation/regulation in comparison to relevant Chapters of WOAHA Codes. The primary datasets are the extracts from FAOLEX where national legislations, regulations or policies are stored as an abstract in English, French or Spanish (regardless of the original languages), in relation to animal welfare or emergency preparedness. Depending on the pace in progress, more datasets may be added in relation to trade coming from SPS notification database of WTO.