

Short Term Mission Report – Joint FAO/IAEA Centre, Vienna

Background and aim of Short Term Mission

My Short-Term Mission at the Joint FAO/IAEA Centre in Vienna aimed at enhancing my technical competences in diagnostics of transboundary and zoonotic diseases and learning about vaccine development approaches at the Animal Production and Health Section and the Laboratory. Furthermore, I sought to gain insight into the coordination of international research programmes, laboratory networks, and capacity-building initiatives within the Animal Production and Health Section.

Research visit report

During the initial days of my research visit at the Animal Production and Health Section of the Joint FAO/IAEA Centre at the Vienna International Centre, I was introduced to the organizational structure of the IAEA (The Department of Nuclear Sciences and Applications, the Joint FAO/IAEA Centre, and the Animal Production and Health Section). This included an overview of the regular programmatic activities (development and implementation of Coordinated Research and Technical Cooperation Projects), ZODIAC ([Link](#)), the *Atoms4Food* ([Link](#)) initiatives, as well as the applications of diverse nuclear techniques to improve agricultural productivity, such as the development of irradiated vaccines for animal health.

I received a comprehensive introduction to the Sections's activities in global animal health coordination. Ivancho provided insights into ongoing Coordinated Research Projects (CRPs) and Technical Cooperation Projects (TCPs), highlighting the complexity of international project design, implementation, and coordination. I was particularly impressed by the involvement of different roles, including programme managers, technical officers, and national liaison officers, in ensuring the effective implementation of projects worldwide.

A key learning outcome was the international laboratory network system (VETLAB Network) and structured knowledge exchange between the Joint IAEA/FAO Centre and counterpart laboratories, aimed at strengthening national laboratory capacities for transboundary animal and zoonotic disease detection and control. I looked into the differences between established reference laboratories and emerging laboratories in resource-limited settings, as well as the challenges associated with capacity building. It became evident that sustainable impact is driven not only by individual laboratory performance, but also by strong communication systems, coordinated technical support, and continuous knowledge exchange by training professionals.

I also learned about tools supporting laboratory networks, including the online platform iVetNet, structured training materials, and collaboration with partner laboratories to address specific diagnostic needs, as well as the implementation of international standards such as ISO 17025. In addition, I was introduced to advanced molecular technologies, including Sanger- and Whole Genome Sequencing and ongoing efforts to improve global sequence data sharing systems.

I had the opportunity to engage with representatives from Technical Cooperation Projects and to hear about regional implementation strategies in African countries. Also, I attended discussions with representatives from Latin-America related to animal health within the *Atoms4Food* initiative, where

I learned about country-specific perspectives, ongoing disease situations and regional priorities. Furthermore, I took part in an emergency coordination meeting related to the Ebola outbreak under the ZODIAC initiative, which focused on diagnostic support and rapid response mechanisms to Ebola and (eventually) other highly contagious zoonotic diseases. This provided a new perspective for me into global outbreak preparedness and coordination procedures.

In my second week, I was able to visit the Seibersdorf laboratory facilities and it started with a guided tour of the laboratory rooms, where I learned about vaccine irradiation techniques, genome sequencing and the development of diagnostic approaches for detection of multiple pathogens for cost-effective implementation. I could engage in discussions on the further development of African swine fever irradiated vaccine approaches and performed real-time PCR assays with separated melting regions for the optimization of an assay detecting different poxviruses with a following assay analysis. Further, I looked into standard operating procedures (SOPs) for field-applicable techniques such as arthropod vector sampling. Additionally, I could observe hands-on techniques for protein purification. On my last day, I had the opportunity to visit the Insect Pest Control facility, where I learned about the use of sterile male insects, such as tsetse flies and fruit flies, for controlling agricultural pests and disease vectors. I also received a guided tour of the Plant Breeding and Genetics Laboratory, where I was introduced to the method of radiation-induced mutation breeding to develop improved crops, such as banana and coffee plants, with desirable traits including increased drought tolerance, resilience to climate change, and higher yields.

Overall, this Short-Term Mission (STM) provided not only training and opportunities for scientific exchange in transboundary animal- and zoonotic disease diagnostics and vaccine development, but also fostered research collaboration between the Joint IAEA/FAO Centre and the Friedrich Loeffler Institute. The mission provided a comprehensive understanding of how international animal health programmes are designed, coordinated, and implemented, with a strong emphasis on capacity building, laboratory networking, and sustainable technical cooperation.

Acknowledgements

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I would also like to thank EPIZONE for enabling my stay, even on short notice. I will gladly share this positive experience with others.

Overall, this Short-Term Mission was one of the most valuable and inspiring experiences of my PhD, giving me the opportunity to engage with an exceptionally supportive and collaborative research environment.

