



From COVID-19 Emergency Response to Integrated Action to Address Zoonotic Diseases

The side event organised by the International Atomic Energy Agency (IAEA) in cooperation with the FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture highlighted the tangible contribution of nuclear science and technology in helping countries throughout the pandemic and in the post-COVID 19 phase, taking a close look at the impact of the FAO/IAEA support in the process of identification and detection of zoonotic diseases.

The event provided an overview of the support delivered to 286 laboratories in 128 countries around the world as part of the IAEA's COVID-19 Emergency Response Assistance activities, and included interventions from scientists at recipient laboratories in Africa, Europe and Latin America who shared with the audience the experience related to the challenges faced by their own countries. The session concluded with an overview of the IAEA's Zoonotic Disease Integrated Action (ZODIAC) initiative, focused on the use and role of nuclear science and derived techniques to better detect and monitor zoonotic diseases outbreaks in the future.

The IAEA's COVID-19 Emergency Response Assistance activities enabled particularly developing countries to enhance their national testing capacities via the use of what is recognised to be one of the most accurate and reliable methods for the detection of the virus causing COVID-19: the real time reverse transcription–polymerase chain reaction (real time RT–PCR).

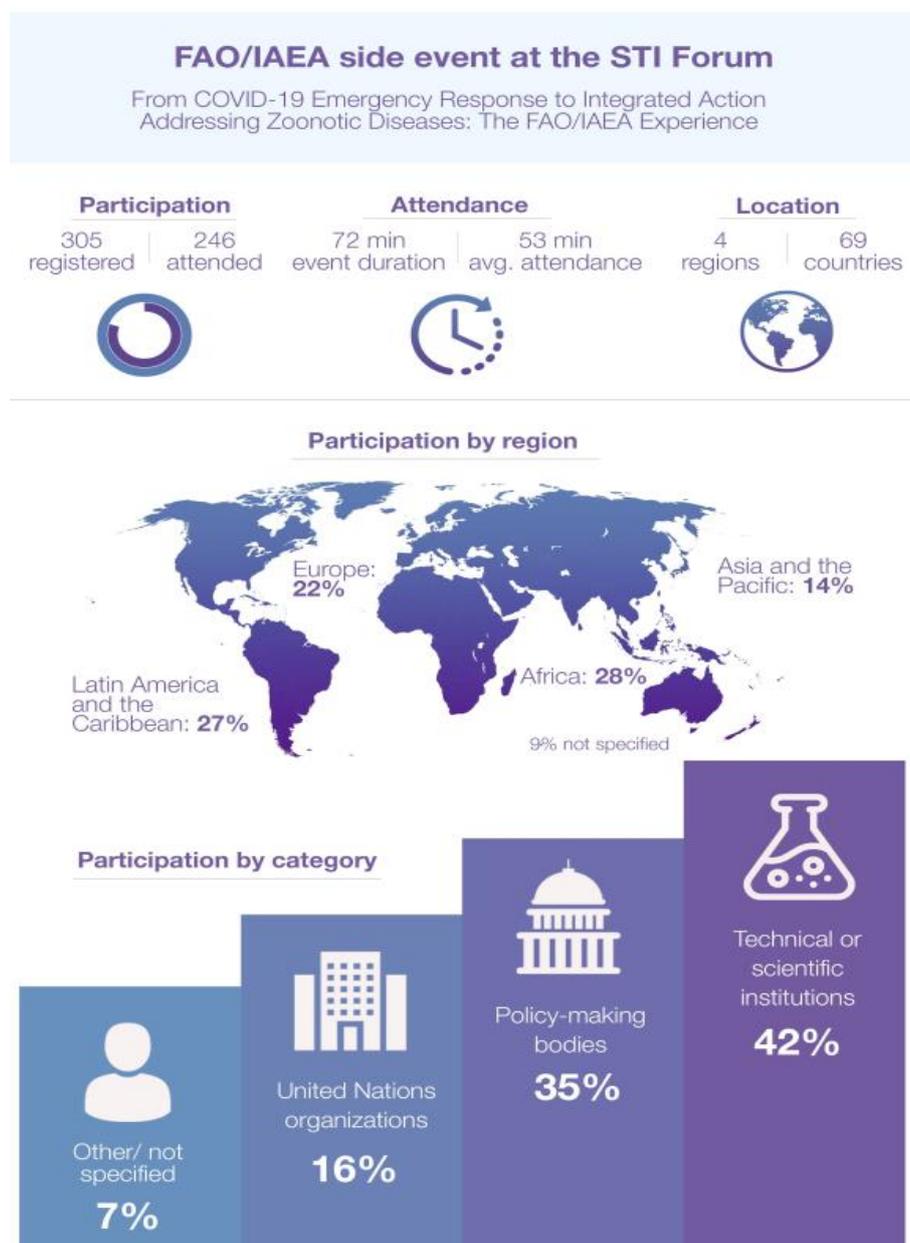
Real-time RT-PCR is a nuclear-derived technique for the detection of virus used in many countries for diagnosing animal and zoonotic diseases including, in the past, Ebola and Zika. Originally, the method used radioactive isotope markers to detect targeted genetic materials, but subsequent refining has led to the replacement of isotopic labelling with special markers, often fluorescent dyes. Compared to other available virus isolation methods, real time RT–PCR has a lower potential for contamination or errors, making it the most accurate method available.

The lessons learned from the IAEA's COVID-19 response, together with the IAEA's extensive experience in addressing zoonotic outbreaks and transboundary animal diseases, set the basis for the latest IAEA's flagship initiative: ZODIAC. Launched in 2020, ZODIAC aims to strengthen capacities in IAEA Member States to address outbreaks of diseases that pass from animals to humans. ZODIAC builds on the experience of VETLAB, a network of veterinary laboratories in Africa and Asia originally set up by FAO and IAEA to combat the cattle disease rinderpest. ZODIAC also intends to continue enhancing South-South cooperation actions to ensure sustainability of results.

The side event closed with a quick excursus on the role of nuclear and nuclear-derived technologies in tackling existential problems like health, hunger, clean water, life on land and below water, responsible production and climate change, thus underlining as, over time, nuclear and nuclear-derived techniques have proven to be critical to improve the life of millions of people worldwide, contributing to the achievement of national development priorities and of the SDGs.

The following panellists participated in the side-event, discussing the role of nuclear applications in support to countries reference COVID-19 recovery and progress towards SDGs' achievement:

- Ana Maria Nicola, General Director of Labs and Analytical Control, National Food Safety and Quality Service (SENASA), Argentina;
- Lorena Jemersic, Head of the Virology Department at the Croatian Veterinary Institute, Croatia;
- Tesfaye Rufael Chibssa is the General Director of the National Animal Health Diagnostic and Investigation Centre (NAHDIC), Ethiopia;
- Giovanni Cattoli, Head of the FAO/IAEA Joint Centre's Animal Production and Health Laboratory;
- Jean-Pierre Cayol, Programme Coordinator, Department of Nuclear Sciences and Applications, IAEA;
- Luis Longoria Gandara, Director of the IAEA Technical Cooperation Division for Latin America and the Caribbean, IAEA.



<https://www.iaea.org/newscenter/news/iaea-highlights-technology-and-partnership-for-zoonotic-disease-preparedness-at-global-un-forum>