



Nuclear Sciences and Applications Laboratories

Science supporting development

The twelve laboratories of the IAEA's Department of Nuclear Sciences and Applications (NA) are a unique feature in the United Nations. The laboratories support and implement activities that respond to the developmental needs of Member States in a range of subject areas, including in food and agriculture, human health, environmental monitoring and assessment, as well as the use of nuclear analytical instrumentation.

The laboratories conduct applied research and development, deliver training and capacity building to Member States and provide technical and analytical services.

Five of the laboratories in Seibersdorf are agricultural and biotechnology-based and are an integral part of the Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture managed by the IAEA and the Food and Agriculture Organization of the United Nations. They are a unique collaborative model in the UN system and assist IAEA Member States in the following ways:



Insect Pest Control Laboratory

Fights key insect pests through the Sterile Insect Technique (SIT), a method of birth control applied to target insect pest populations.



Animal Production and Health Laboratory

Strengthens food security and livelihoods through improved livestock productivity and control of transboundary animal and zoonotic diseases.



Plant Breeding and Genetics Laboratory

Strengthens food security and resilience to climate change through higher yielding crop varieties resistant to disease, drought and other harsh conditions.



Soil and Water Management & Crop Nutrition Laboratory

Optimizes soil management and agricultural water use efficiency for climate-smart agriculture. Assesses and traces the fate of radionuclides in soils, crops and agricultural water resources.



Food and Environmental Protection Laboratory

Establishes effective systems to support food authenticity, food traceability and contaminant control, to enhance food safety and international agriculture trade.

Three Seibersdorf laboratories assist Member States in the following areas:



Dosimetry Laboratory

Ensures the safe and effective use of radiation in cancer treatment and supporting radiation dosimetry by providing calibration and audit services worldwide.

By the Numbers

MORE THAN

160 COUNTRIES GLOBALLY

HAVE RECEIVED SUPPORT FROM THE LABORATORIES



12 LABS IN THREE LOCATIONS

8 IN SEIBERSDORF, AUSTRIA

1 AT IAEA HQ IN VIENNA, AUSTRIA

3 IN MONACO



IAEA

Nuclear
Sciences and
Applications



Nuclear Science and Instrumentation Laboratory

Develops, adapts and transfers nuclear instrumentation as well as accelerator applications to Member States for a wide range of operations from environmental monitoring to materials science to the preservation of cultural heritage.



Terrestrial Environment Laboratory

Provides environmental assessments and ensures high quality analytical measurements for radioactive, industrial, and other pollution in Member State laboratories by providing laboratory reference materials and conducting worldwide proficiency tests.

NA maintains three marine environment laboratories in Monaco dedicated to the understanding and preservation of a healthy marine environment and the sustainable development of environmental resources. They assist Member States in the following ways:



Radiometrics Laboratory

Supports reliable marine radioactivity measurements, monitoring and assessments. It maintains low level counting facilities and produces certified reference materials to improve the quality of measurements worldwide.



Radioecology Laboratory

Studies the movement of contaminants and bio-toxins in marine ecosystems, including their accumulation in seafood species; the carbon cycle and the marine impacts of global warming and ocean acidification.



Marine Environmental Studies Laboratory

Monitors contaminants in the marine environment by developing and transferring analytical methods, providing reference materials and conducting international proficiency tests, and applying stable isotopic methods for environmental forensics.

One laboratory is located at IAEA Headquarters in Vienna:



Isotope Hydrology Laboratory

Maps availability and sustainable management of freshwater and the impact of climate change on rivers, lakes and groundwater aquifers.

ReNuAL II

Renovation of the Nuclear Applications Laboratories

The modernization of the NA laboratories in Seibersdorf began in 2014 with the aim of significantly enhancing the services and infrastructure that the IAEA can make available to Member States and to position the laboratories to better adapt to future needs. The initiative consists of new building construction, the acquisition of new laboratory equipment, and infrastructure upgrades. The final phase of the initiative, known as ReNuAL2, includes construction of a new laboratory building (the FML2), replacement of ageing greenhouses, and refurbishment of the Dosimetry Laboratory.

