North Macedonia

IAEA Member State since February 1994

IAEA Technical Cooperation Programme

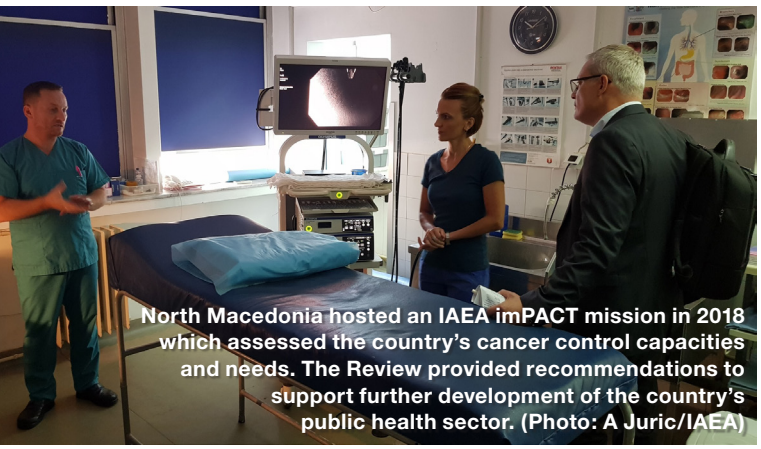
Key achievements in North Macedonia

- 2018: The country's first SPECT-CT hybrid imaging system is inaugurated at the Institute of Pathophysiology and Nuclear Medicine of the 'Mother Theresa' University Clinical Centre. Over 2000 patients have received diagnostic scans, and waiting times have reduced by 20 per cent.
- 2017: North Macedonia's University Institute for Positron Emission Tomography (PET) hosts 10 IAEA fellows from Africa for comprehensive training in radiopharmacy.
- 2017: The first public PET centre is officially opened at the University Institute for Positron Emission Tomography in Skopje, to help detect the early onset of diseases.

Atoms for peace and development

Widely known as the world's 'Atoms for Peace and Development' organization within the United Nations family, the IAEA is the international centre for cooperation in the nuclear field. The Agency works with its Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.

The IAEA's technical cooperation (TC) programme helps countries to use nuclear science and technology to address key development priorities in areas including health, agriculture, water, the environment and industry. The programme also helps countries to identify and meet future energy needs. It supports greater radiation safety and nuclear security, and provides legislative assistance.



North Macedonia hosted an IAEA imPACT mission in 2018 which assessed the country's cancer control capacities and needs. The Review provided recommendations to support further development of the country's public health sector. (Photo: A Juric/IAEA)

Recent project successes

Nuclear medicine and diagnostic imaging

With IAEA assistance, North Macedonia improved the radiation protection of patients by strengthening the quality of positron emission tomography (PET) diagnostics for oncological and non-oncological patients. This was achieved by introducing new PET radiopharmaceuticals and establishing a national centre for tracking patient doses and quality assurance at the Institute of Physics, part of the Faculty of Natural Sciences and Mathematics in Skopje. An online system was also provided to the Institute of Physics to monitor patient doses and for the remote control of quality at 16 State mammography units and 19 computed tomography scanners. These efforts helped to establish national diagnostic reference levels that will prevent unintended exposure of patients and staff, and improve the country's clinical practice and radiation safety culture in medical settings.

Food safety

To help standardize radiation processing capabilities and improve quality control procedures in 15 countries across Europe, the IAEA supported a peer review initiative to compare the dosimetry methods used. Radiation processing contributes to sterilization of medical supplies, food and industrial irradiation, development and characterization of value-added products, as well as protection and remediation of environment. At this time, North Macedonia's Laboratory at the Faculty of Electrical Engineering and Information Technologies of the University Ss. Cyril and Methodius (UKIM-FEIT) in Skopje is focusing on the detection of irradiated food originating from other countries. Irradiated food helps reduce insect pests and increases shelf life, and needs to be labelled to comply with national and EU regulations. The multiple radiation processing methods were reviewed by one of the IAEA's Nuclear Applications Collaborating Centres, the Centre for Radiation Research and Technology, part of the Institute of Nuclear Chemistry and Technology in Warsaw, Poland. The conclusions were then used to help upgrade the Laboratory and attain accreditation in radiation technologies and quality control procedures (MKC-EN ISO/IEC 17025:2006) by the Institute of Accreditation of the Republic in 2019. The increased national capacities also led to the establishment of a monitoring

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programme for detection of irradiated food at the Laboratory, in cooperation with the Food and Veterinary Agency.

Environmental radioactivity monitoring

With IAEA assistance, the Institute of Public Health upgraded its capacity for environmental and emergency radioactivity monitoring and reporting. IAEA support included an expert mission, a fellowship on radon measurement and the provision of equipment for monitoring the radioactivity of water, soil and sediments. The Institute also improved its ability to assess potential exposure to ionizing radiation by the general public, and introduced regular monitoring and an early warning network for nuclear medicine departments and industries working with naturally occurring radioactive materials.

Active national projects

- Enhancing National Capacities to Standardize Nuclear Based and Related Techniques for Food Safety and Detection of Irradiated Food (MAK5009)
- Strengthening and Improving the Quality of Positron Emission Tomography Diagnostics of Oncological and Non-Oncological Patients with New Positron Emission Tomography Radiopharmaceuticals (MAK6017)
- Strengthening the National Capacity for Nuclear Medicine, Radiotherapy and Diagnostic Radiology (MAK6019)
- Strengthening Central Level Capacities to Reduce Air Particulate Matter (MAK7004)

North Macedonia also participates in 13 regional and 2 interregional projects, mostly in the areas of health and nutrition.

Previous IAEA support to North Macedonia

Previous IAEA support to North Macedonia focused on improving capacity in nuclear medicine and radiation oncology, environmental radioactivity monitoring, and radiation applications for the protection of the environment and for health.

IAEA support to North Macedonia, 2009–2019

316 trained (including 154 women)

55 international experts provided

236 attended specialist meetings (including 139 women)

Priority areas of support

- Supporting human health
- Improving the nuclear regulatory framework and infrastructure
- Enhancing agriculture and food safety
- Strengthening the use of nuclear applications

North Macedonia's contribution to South-South and triangular cooperation, 2009–2019

57 expert and lecturer assignments provided by North Macedonia

3 training courses hosted

59 fellows or scientific visitors hosted

Based on data available as of April 2020

Cancer control imPACT Review conducted: September 2018

Strategic documents supported

- United Nations Development Assistance Framework (2016–2020)
- Country Programme Framework 2019–2023, signed in December 2019

www.iaea.org/technicalcooperation

The IAEA collaborates with National Liaison Officers and Permanent Missions to deliver its TC programme.