



Key achievements in Jordan

- 2019: The Jordan Research and Training Reactor at the University of Science and Technology in Ar-Ramatha produces its first radioisotopes (I-131), used for cancer treatment.
- 2017: Inauguration of the ‘Synchrotron-light for Experimental Science and Applications in the Middle East’ (SESAME), a centre for regional cooperation and advanced scientific research.
- 2016: Jordan’s first multipurpose research and training reactor is inaugurated at the Jordan University of Science and Technology.

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.



Medical staff studying patient images using a positron emission tomography-computed tomography (PET-CT), diagnostic imaging technique at the King Hussein Cancer Centre. The IAEA supported the centre’s procurement of additional diagnostic equipment and the installation of a new single photon emission computed tomography (SPECT-CT). (Photo: D. Calma/IAEA)

Recent project successes

Human health

The King Hussein Cancer Center received IAEA support to establish training programmes in nuclear medicine and diagnostics for family doctors, radiologists, radiotherapists and medical physicists. Further assistance was provided through expert advice and fellowships. These measures have strengthened Jordan’s capacity to meet its current and future needs for cancer services.

Nuclear applications

The Synchrotron-light for Experimental Science and Applications in the Middle East – or SESAME – is an independent, international scientific and technological research centre located in Allan, Jordan, which conducts research for biology, archaeology, medical and material sciences. It is now being promoted as a global networking hub for synchrotron experts.

The IAEA has provided extensive staff training and expert support for over ten years to ensure the safe commissioning and operations of the facility.

Research reactor

Inaugurated in 2016, the Jordan Research and Training Reactor at the Jordan University of Science and Technology in Ar-Ramtha is a 5 megawatt thermal reactor, which can be upgraded to 10 megawatts.

In addition to offering opportunities for research and training, the reactor has started to produce the radiopharmaceutical I-131, which is used to treat cancer. Plans are underway for the production of radionuclides for agricultural and industrial applications, and for the construction of a radioactive waste treatment facility which will process waste materials from the reactor as well as from the country’s industrial applications and hospitals.

Recently, the IAEA supported Jordan to implement a management system to ensure adherence to international standards and those of the Jordan Atomic Energy Commission (JAEC). The IAEA also provided safety reviews and consultations, including an IAEA Integrated Safety Assessment of Research Reactors (INSARR) mission.

Active national projects

- Enhancing the Capabilities of the Gamma Irradiation Centre (JOR1007)
- Developing Safe and Effective Operations and Utilization of the Research and Training Reactor (JOR1009)
- Supporting the Implementation and Construction Activities of the First Nuclear Power Plant (JOR2015)
- Developing a Detailed Engineering and Complete Feasibility Study for Uranium Extraction from Local Ores (JOR2016)
- Enhancing National Radiotherapy Services at Public Hospitals (JOR6016)
- Enhancing National Capabilities in Investigation and Treatment of Natural Radioactivity in Drinking Water (JOR7006)
- Strengthening National Nuclear Regulatory Capabilities for Nuclear and Radiation Safety (JOR9018)

Jordan also participates in 45 regional and 16 interregional projects, mostly in the area of health and nutrition.

Previous IAEA support to Jordan

In recent years, the IAEA has focused on enhancing capacities for the safe and effective operation of the Jordan Research and Training Reactor and the local extraction of uranium. The country also received support for its nuclear power plant's licensing and construction activities. National capabilities to investigate and treat natural radioactivity in drinking water were enhanced. The capacities of the nuclear regulatory authority and nuclear safety were also strengthened.



The Jordan Research and Training Reactor made significant progress in the production of radiopharmaceuticals and neutron activation analysis. The JAEC, which owns and operates the reactor, has received support through IAEA safety reviews and expert advice, including an INSARR mission. (Photo: D Calma/IAEA)

IAEA support to Jordan, 2009–2019



820 trained
(including 172 women)

261 international experts provided

291 attended specialist meetings
(including 49 women)

Priority areas of support

- Supporting nuclear energy initiatives
- Facilitating the development of human resources
- Improving human health infrastructure
- Enhancing the management of water resources

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

70 expert and lecturer assignments provided by Jordan

415 training course participants

172 fellows or scientific visitors hosted

Based on data available as of April 2020

Cancer control **IMPACT** Review conducted: January 2012

Strategic documents supported

- United Nations Sustainable Development Framework (2018–2022), signed December 2017
- Country Programme Framework 2018–2022, signed in June 2017

www.iaea.org/technicalcooperation

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