



Key achievements in Kuwait

- 2019: Kuwait Institute for Scientific Research is designated as an IAEA Collaborating Centre to use nuclear and isotopic techniques to advance coastal and marine sciences.
- 2018: Kuwait Cancer Control Centre is designated as a Regional Resource Centre in nuclear medicine by the ARASIA Board of Representatives.
- 2015: The Integrated Environmental Radioactivity Monitoring Network begins operations.

US patents obtained:

- 2018: to improve preparation of alpha particles for the decommissioning of radioactive materials.
- 2017: for a device that collects samples of microscopic and small seawater organisms.

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.



A senior research associate at KISR checks pH levels in a controlled system of seawater tanks provided by the IAEA, to study the impact of ocean warming and acidification on marine organisms. (Photo: D. Calma/IAEA)

Recent project successes

Groundwater management

The Kuwait Institute for Scientific Research (KISR) conducted studies, with IAEA support, to estimate the outflow of groundwater containing nutrients into the Gulf and to investigate the impact of above – and below – the ground drainage on the quality of freshwater in the Al-Raudhatain area of northern Kuwait. Additional support was provided to assess the hydrological and hydrochemical interactions between the main freshwater aquifers in southern Kuwait, and to evaluate possible nitrate and sulphate contamination of groundwater by different sources. The isotopic data obtained from the studies helped tailor national groundwater strategies more effectively by determining the regions with freshwater aquifers and assessing recharge conditions.

Marine monitoring and protection

Kuwait's marine environment faces both naturally occurring and man-made challenges. The country has developed strategies to combat climate change with an emphasis on tackling ocean acidification and the warming of the oceans. In line with this, KISR partnered with the IAEA to strengthen its marine environmental research capacity by establishing a national radioecological programme to monitor contaminants across the foodchain. A radionuclide monitoring network was also established with IAEA support to measure radioactivity in the marine environment.

Industrial applications

KISR's Petroleum Research Centre (PRC) was able to enhance its laboratory infrastructure and technical competencies to apply nuclear technologies with IAEA support. The Centre provides services to the oil sector in core analysis and characterization for the Kuwait reservoir and contributes to improving the productivity of petroleum refining technology.

In addition, the PRC now provides services to investigate the hydrodynamics of reactors, which are used as part of the refinery process, to ensure the safety, efficiency and sustainability of their operations. These improvements are making an important contribution to enhancing the productivity, reliability and safety of Kuwait's oil industry.

Active national projects

- Investigating the Hydrodynamics of Large Scale Reactors for Catalytic Hydro-Processing through Isotope Techniques (KUW1008)
- Implementing Mutation Induction to Improve Barley Production under Harsh Environmental Conditions - Phase III (KUW5005)
- Producing Current Good Manufacturing Practices Compliant Fluorine-18 Radiopharmaceuticals in the Cancer Control Centre (KUW6009)
- Studying the Influence of Climate Change on Contaminant Transfer in Marine Organisms and Assessing the Impact of Pollutant Bioaccumulation on Seafood Safety Using Nuclear and Isotopic Techniques (KUW7008)
- Identifying Fugitive Gas Contamination in Groundwater for the Management of Oil Field Aquifers (KUW7009)

Kuwait also participates in 40 regional and 5 interregional projects, mostly in the area of water and the environment.

Previous IAEA support to Kuwait

In recent years, IAEA support to Kuwait covered a wide range of radiation and radioisotope applications addressing national priority issues of socioeconomic significance. This included increasing barley and forage crop production, investigating groundwater resources, marine environment monitoring, applications of nuclear techniques in the oil industry, and strengthening the national radiation safety infrastructure.

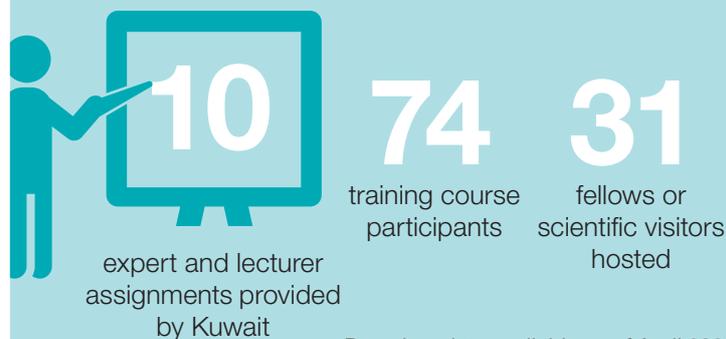
IAEA support to Kuwait, 2009–2019



Priority areas of support

- Strengthening nuclear law
- Improving nuclear and radiation safety and security infrastructure
- Supporting groundwater management
- Improving human health
- Facilitating energy planning and development
- Supporting the application of radioisotopes and radiation technology in the oil and gas industry
- Protecting marine ecosystems
- Strengthening the food and agriculture sector

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



Based on data available as of April 2020

Strategic documents supported

- Country Programme Framework 2020–2025, signed in September 2019

www.iaea.org/technicalcooperation

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

