

# Lebanon

IAEA Member State since June 1961

## Selected achievements

**2020:** Emergency response and support are provided in response to the explosion at the Port of Beirut.

**2018:** The American University of Beirut Medical Centre is designated as an ARASIA Regional Resource Centre for Nuclear Medicine.

**2014:** The Lebanese Atomic Energy Commission and the Central Bank of Lebanon begin to use nuclear techniques to control the quality of banknotes and coins.

**2009:** The Lebanese Atomic Energy Commission introduces a postgraduate Diploma in Radiation Protection and the Safe Use of Radiation Sources.



IAEA staff visit the American University of Beirut and the cyclotron lab to which the IAEA is providing support. (Photo: L.Yang/IAEA)

This facility is a vital component of Lebanon's water resource management. It supports economic and social welfare without compromising the sustainability of water systems or environmental integrity.

## National priorities

- Radiological and nuclear safety and security
- National analytical capabilities
- Nuclear research
- Human health

## Main areas of IAEA support

- Nuclear analytical capabilities
- Production of non-conventional radioisotopes
- Human health

## Project successes

### Water and the environment

The Lebanese Atomic Energy Commission (LAEC) has established an isotope hydrology laboratory using nuclear techniques for water resource management.

The laboratory now carries out isotopic analyses, including tritium and C-14, to address challenges related to water such as shortages, management of water quality, and groundwater renewal rates.

### Emergency preparedness and response

A national early warning system was established with IAEA assistance to support Lebanon's efforts to monitor radiation in the air. This has boosted Lebanon's radiation protection infrastructure and reinforced the country's analytical capabilities for environmental radionuclide monitoring.

The establishment of remote monitoring stations and a network of monitoring centres, along with enhanced specialist skills through fellowships, has allowed Lebanese authorities to further strengthen their radiation safety infrastructure and increase emergency response and preparedness.

### Industrial applications

The collaboration between the Central Bank of Lebanon and the LAEC, supported by the IAEA, has led to the development of quality control tests using nuclear techniques to combat counterfeit banknotes and coins.

LAEC's expertise in the 'Time of Flight-Secondary Ion Mass Spectrometry' method was improved, providing analytical information on elements contained in different materials.

This collaboration delivered economic benefits, including improved control for the production of plastics, paint, glass, and other coatings.

Lebanon now benefits from advanced nuclear techniques for analysing consumer goods, geological formations, ancient artifacts, archaeology samples, and commercial paints.

## Participation in the major initiatives

- NUTEC Plastics
- Rays of Hope
- ZODIAC

## Date of imPACT Review(s)

2014



The Lebanese Atomic Energy Commission is monitoring for radioactivity in the air using an early warning system.  
(Source: L. Yang/IAEA)

## IAEA support received in the 21st century



## Contributions to South-South and triangular cooperation

