Portugal

IAEA Member State since July 1957

Selected achievements

2023: Portugal enhances its capacities to apply the sterile insect technique (SIT).

2019: A decommissioning plan for a Portuguese research reactor is prepared.

1989: A Secondary Standards Dosimetry Laboratory (SSDL) is established. Since then, the laboratory has been supporting radiation therapy, diagnostic radiology, nuclear medicine and radiation protection services through its measurement capabilities.

National priorities

- Nuclear and radiation safety food and agriculture
- Human health and nutrition
- Water and the environment
- Energy and industry

Main areas of IAEA support

- Human health
- Decommissioning of a research reactor

In a laboratory, adult sterile male mosquitoes are transferred from a net cage to a FAO/IAEA Flight Test Device (FTD) for quality control purposes. (Photo: H. Osório)

Project successes

Radioactive waste management

From 2005 to 2008, the IAEA supported Portugal in converting the highly enriched uranium (HEU) fuel core of the Portuguese Research Reactor into low enriched uranium (LEU) and repatriating the HEU core back to its country of origin.

The reactor shut down permanently in 2017, and spent fuel was returned in 2019.

The Tecnológico e Nuclear (ITN) staff were trained and able to handle all aspects of the conversion process.

IAEA support for preparing the decommissioning plan contributed to the safe closure of the Portuguese research reactor.

Insect pest control

With IAEA support, Portugal enhanced its capabilities to apply the sterile insect technique (SIT) to curtail the population of the invasive *Aedes albopictus* mosquito, thereby reducing the risk of vector-borne diseases.

This was achieved by carrying out suppression pilot and mark-release-recapture trials, conducted for the first time in Portugal from October to November 2022.

A longitudinal monitoring of target and control sites took place from the beginning of 2022 to the end of 2023. Local staff were trained in SIT components through a TC project which included two scientific visits and three expert missions.

Water resources management

The Environmental Isotopes Laboratory of IST was established in 1986 with IAEA assistance.

Key work carried out by the laboratory used environmental isotopes to identify and quantify sources of pollution. This has led to the protection and a better management of groundwater resources for human supply.

A mass spectrometer was installed with IAEA support to apply isotope hydrology for the identification of nitrate contamination sources in water resources (groundwater and surface waters).

A field worker releases fluorescent marked sterile mosquitoes for a Mark-Release-Recapture trial. This process provides essential data on the field dispersal capacity of the sterile mosquitoes and survival rate in the field (in these trials, irradiated sterile mosquitoes are released and recaptured in two, four, and six days in different points of the treatment area). (Photo: F. Amaro)

Participation in the major initiatives

- ZODIAC

IAEA support received in the 21st century

10
national TC projects implemented

58 (36 women)
fellows and scientific visits

178 (100 women)
training participants

400 (217 women)
meeting participants

40 (4 women)
expert missions received

Contributions to South-South and triangular cooperation

184 (77 women)
fellows and scientific visits hosted

333 (184 women)
meeting participants hosted

203 (46 women)
expert missions supported