

Brazil

IAEA Member State since July 1957

Selected achievements

2023: The Brazilian Ministry of Health approves the use of the sterile insect technique (SIT) to control *Aedes Aegypti*.

2023: For the first time in the region, a mobile electron beam linear accelerator is installed in a trailer for the treatment of industrial wastewater.

Since 2022: Two mammography units are installed on the Brazilian Navy's Ships of Hope, offering better access to women living in communities on the Amazon River for breast cancer screening.



The IAEA is helping Brazil to preserve cultural artefacts without causing damage using radiation techniques. (Photo: L. Potterton/IAEA)

National priorities

- Nuclear medicine and radiotherapy for cancer control
- Food safety
- Water and terrestrial ecosystems management
- Energy planning
- Nuclear and radiation safety and security

Main areas of IAEA support

- Human resources development
- Radiation safety
- Sterile insect technique
- Radioisotope use
- Human health and environmental protection

Project successes

Insect pest control

Brazil has suffered dengue outbreaks over the past three decades, and more recently chikungunya, and Zika, which are spread by the same vector, *Aedes aegypti*, have also been detected. New vector control methods were needed.

The IAEA has been supporting Moscamed Brasil since 2005, including facilitating the transfer of a gamma cell irradiator to scale up the production

of sterile insects. In 2020, the IAEA helped Moscamed Brasil to examine the feasibility of using the sterile insect technique to control *Aedes aegypti*. The SIT pilot in Recife demonstrated a 65 per cent reduction in *Aedes aegypti* egg hatch.

Moscamed Brasil was one of the first SIT facilities in the world, and is a regional leader in pilot projects carried out through the IAEA's technical cooperation programme to demonstrate the effectiveness of the sterile insect technique. It has been designated as an IAEA Collaborating Center, and has hosted numerous training courses and scientific exchanges under the technical cooperation programme.

Industrial applications

Supported by the IAEA, the Institute for Energy and Nuclear Research (IPEN) has developed a mobile electron beam linear accelerator for treating industrial wastewater on-site for reuse.

The mobile unit is expected to make a crucial contribution to addressing Brazil's industrial wastewater challenges, especially for industries located in São Paulo. São Paulo State authorities and metallurgical, textile, food, chemical, electrical, cellulose and paper industries are making a major effort to address industrial effluents, including in the rivers and water reservoirs located close to industrial areas.

The mobile unit offers a potential solution for industrial effluent problems and will enable water reuse, an important factor as water scarcity is increasing.

Human health

Since 2022, women living in communities on the Amazon River have better access to breast cancer screening, thanks to two new mammography units installed on Brazilian navy ships with IAEA support.

Each ship can perform up to 1000 mammograms annually, which has effectively tripled the screening capacity in a region where breast cancer constitutes nearly 30 per cent of all cancer cases. Previously, women in remote areas had to face extended journeys, often over several days, to access screening services.

The IAEA also provided funds to train the personnel operating the equipment. The support has contributed to improved healthcare accessibility in remote regions of the country.



IAEA Director General Rafael Mariano Grossi participates in a sterile insect release ceremony for dengue mosquito control in Recife, Brazil, July 2021. (Photo: D.Calma/IAEA)

Participation in the major initiatives

- NUTEC Plastics
- ZODIAC

IAEA support received in the 21st century



Contributions to South-South and triangular cooperation

