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.

Key achievements in Honduras

- 2017: Honduras’ first public brachytherapy unit is inaugurated at the national Hospital San Felipe in Tegucigalpa.
- 2016: The General Directorate of Radiological Safety is established.

Isotope hydrology

Just over half the population of Honduras’ capital, Tegucigalpa, has access to drinking water. The rest rely on water brought in by tankers. Honduras sought IAEA assistance to determine the suitability of its water aquifers as a quick and economical solution to improve the availability of drinking water in the city. Isotope hydrology techniques were used to identify favourable zones where good quality and sustainable water could be sourced.

Using geochemical and isotopic techniques, the authorities can better understand the location and hydrogeological function of the city’s replenishable aquifers, and identify which areas are vulnerable to pollution. The data collected can support the development of strategies for sustainable water management, to improve the availability and distribution of drinking water in the city. This includes establishing protection or recharge zones (such as mountain ranges), which lowers contamination risks and positively affects the quality of water in the city.

The experience and knowledge gained through this activity extended beyond the capital, particularly to the provinces of the ‘Dry Corridor’ of Honduras, where drought is a reoccurring issue.

Radiation oncology in cancer management

With IAEA assistance, the country’s first public brachytherapy service was set up at the national Hospital San Felipe in Tegucigalpa. It is now providing patients with treatment for many types of cancer, such as cervical, prostate and breast cancers, which are the most common in the country. Brachytherapy is a form of radiation therapy where a radioactive source is placed either directly next to or inside the tumour itself.

Hospital personnel including radiation oncologists, medical physicists, therapists and nurses received comprehensive training in the proper use of the equipment to ensure the safe and effective treatment of patients.

1000 patients are expected to benefit each year from this new capacity, substantially increasing the number of cancer patients able to access treatment.
Nuclear medicine and diagnostic imaging
Cardiovascular diseases and cancer account for nearly 40 per cent of deaths in Honduras, but until very recently, there were no public services providing early and reliable diagnosis.

To help address this, the IAEA supported the start of services at the country’s first public nuclear medicine facility at San Felipe General Hospital in 2020. Nuclear medicine is a branch of medical imaging that uses small amounts of radioactive material to diagnose or treat a large variety of diseases, including many types of cancers, heart disease and neurological disorders.

IAEA support included the procurement of a SPECT-CT machine and nuclear medicine training for doctors, physicians and technicians. Physicians are now able to diagnose diseases earlier and make treatment more effective.

Active national projects
- Improving National Capabilities in the Use of Nuclear Technologies for the Promotion of Sustainable Development Goals (HON0003)
- Improving Genetic Resistance of Coffee to Coffee Leaf Rust through Mutation Breeding (HON5009)
- Strengthening Capacity in Isotope Hydrology for Determining the Water Balance in Tegucigalpa (HON7002)
- Strengthening the National Infrastructure for Radiation Safety (HON9005)

Honduras also participates in 30 regional and 3 interregional projects, mostly in the area of food and agriculture.

Previous IAEA support to Honduras
IAEA support has previously focused on strengthening the national infrastructure for radiation safety and the regulatory control of radiation sources. Further support helped strengthen the national dosimetry infrastructure to improve coverage and radiation dose control of workers exposed to radiation as part of their work.

National projects also supported areas related to cancer diagnosis and control. In addition, Honduras has benefited from capacity building activities in fields related to food safety and insect pest control.

IAEA support to Honduras, 2009–2019

- 228 trained (including 76 women)
- 42 international experts provided
- 62 attended specialist meetings (including 26 women)

Priority areas of support
- Strengthening radiation protection and safety
- Supporting the human health sector
- Improving agriculture and food security
- Facilitating sustainable management of water resources

Honduras’ contribution to South-South and triangular cooperation, 2009–2019

- 4 expert and lecturer assignments provided by Honduras
- 3 training courses hosted
- 1 fellow or scientific visitor hosted

Based on data available as of April 2020

Cancer control imPACT Review conducted: May 2016

Strategic documents supported
- Country Programme Framework 2017–2021, signed in May 2017

www.iaea.org/technicalcooperation
The IAEA collaborates with National Liaison Officers and Permanent Missions to deliver its TC programme.