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.

Recent project successes

Animal health

Since 2010, the IAEA has supported Belize in applying nuclear and molecular disease diagnostic and control techniques, and in strengthening its capacities in animal health management. Staff were trained to diagnose shrimp diseases, the highly contagious brucellosis, classical swine fever, rabies, avian influenza and Newcastle disease. Assistance also included equipment, consumables, reagents (chemicals needed to conduct tests) and on-the-ground technical expertise.

In 2015, the Belize Agricultural Health Authority (BAHA) inaugurated a new Biosafety Level 2 Molecular laboratory to support animal health management activities and investigate diseases that could be a potential hazard to people and the environment. The IAEA provided technical training and laboratory equipment to further strengthen its capacities, which now include the ability to conduct a nuclear-derived technique called ‘polymerase chain reaction’ (PCR), to quickly detect viruses. Additional specialist training was provided in quality assurance and control practices, enabling the laboratory to initiate a quality management system based on ISO 17025, and to participate in an inter-laboratory calibration and testing programme.

Today, the BAHA PCR facility performs tests on 15 different types of substances for disease diagnosis, cutting costs by more than half and lowering turnaround times for test results from up to ten days to less than two.

Food safety

BAHA received IAEA support to establish the country’s first international standard food safety laboratory, which helps ensure Belize’s food exports are free from harmful chemical contaminants, such as agricultural pesticides.

Training strengthened the laboratory staff’s ability to optimize, validate and analyse food samples using a multiresidue method to test for scores of different contaminants. Quality assurance and control measures were also implemented for sampling and analysis procedures, enabling BAHA’s Food Safety Laboratory to provide full sample preparation and extraction services, with IAEA assistance.
Active national projects

- Strengthening national capacities to control animal diseases (BZE5010)
- Strengthening National Capacities for Monitoring and Surveillance of Pesticides Residues and Mycotoxins in Priority Commodities (BZE5011)
- Improving Diagnostic Imaging in Belize (BZE6002)
- Strengthening National Laboratory Capacity for Aquatic Environmental Studies (BZE7003)

Belize also participates in 14 regional and 3 interregional projects, mostly in the area of human health.

Previous IAEA support to Belize

Previous IAEA assistance concentrated on radiation medicine, radiation protection, animal health and the marine environment.

IAEA support enabled the Belize Agricultural Health Authority (BAHA) to procure and use real time polymerase chain reaction (PCR) equipment to detect diseases. (Photo: J Villanova/BAHA)

www.iaea.org/technicalcooperation

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