



Bulgaria

IAEA Member State since August 1957



Technical Cooperation Programme

Key achievements in Bulgaria

- 2016: The Laboratory of Molecular Biology is established at the Maritsa Vegetable Crops Research Institute in Plovdiv.
- 2015: The Cyber Learning Platform for Nuclear Education and Training is inaugurated.
- 2012: Bulgaria begins performing highly specialized total body irradiation treatment prior to conducting bone marrow transplants.

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.



The IAEA supported the Laboratory of Molecular Biology at the Maritsa Vegetable Crops Research Institute to upgrade its infrastructure and the use of nuclear and molecular techniques to improve yields of food crops. (Photo: N Tomlekova/MVCRI)

Recent project successes

Nuclear knowledge management

The IAEA supported the integration of the Cyber Learning Platform for Nuclear Education and Training (CLP4NET) for the Kozloduy Nuclear Power Plant's training system, and its implementation at the College of Energy and Electronics (CEE) at the Technical University of Sofia.

CLP4NET allows users to easily find nuclear related educational resources in fields including energy, safety, science and technology. The introduction of this platform enabled Bulgaria to develop a new solution to build the National Nuclear Network of Competency, provide remote access to the common learning management system, and ensure a systematic eLearning tool to complement face-to-face education at the Kozloduy Nuclear Power Plant Training Centre, the CEE and the Technical University in Sofia. Student and staff participation in distance-learning programmes has been considerably simplified, and self-learning and education throughout the country has been promoted.

Human health

The IAEA provided assistance to Bulgaria to begin performing highly specialized total body irradiation treatment prior to conducting bone marrow transplants. With capacity already in place to perform transplants, the IAEA helped procure the country's first blood irradiator for the Queen Giovanna University Hospital in Sofia. Over the course of the next few years, the IAEA continued to assist medical professionals to optimize these operations by procuring a linear accelerator radiotherapy machine (LINAC), and supporting specialized training.

Since November 2010, 1778 blood samples from patients (including 195 children) with acute lymphoblastic, acute myeloid and chronic myeloid leukaemias as well as non-Hodgkin's lymphoma have been irradiated. Irradiation treatment has also been performed on 13 adults and three children. These measures have significantly improved Bulgaria's ability to provide quality radiation oncology services to patients and especially to children.

Agriculture

The IAEA assisted Bulgaria's Maritsa Vegetable Crops Research Institute at the Agricultural University in Plovdiv, and other Bulgarian Institutes and Universities in obtaining the skills and equipment necessary to carry out crop mutation and characterization. This enabled the country to develop a number of different priority crop varieties to increase the quality and quantity of yields, and to use crossbreeding techniques to obtain hybrids to develop strains further.

With a focus on supporting small and medium-sized producers, the project developed faster maturing varieties of peppers with better blue, violet or red flavonoid colours and potatoes with a higher tolerance to drought and similarly heightened health-benefitting flavonoid concentrations. In addition, new tomato, bean, pea, onion and watermelon varieties are in the process of being developed which will contribute to boosting Bulgaria's competitiveness in international markets.

Active national projects

- Implementing of Radiocarbon Method for Dating of Archaeological Finds (BUL0011)
- Implementing an Integrated Approach for Capacity Building at the Nuclear Regulatory Agency (BUL0012)
- Increasing Productivity and Quality of Basic Food Crops (BUL5015)
- Improving the Productivity and Quality of Economically Important Crops through Mutation Breeding and Biotechnology (BUL5016)
- Enhancing the National Diagnostic Capabilities for Detection of Hepatitis E Virus in Pigs and Pig Products (BUL5017)
- Establishing a National Dosimetry Audit System and Dosimetry Quality Audit Programme in Radiation Therapy (BUL6014)
- Developing a National Strategy for the Remediation of Uranium Legacy Sites (BUL9025)

Bulgaria also participates in 39 regional and 3 interregional projects, mostly in the areas of health and nutrition, food and agriculture, and radiation protection and nuclear safety.

Previous IAEA support to Bulgaria

In recent years, support focused on strengthening Bulgaria's nuclear power and radiation safety infrastructure and developing a national strategy for the remediation of uranium mining legacy sites. In the area of human health, the IAEA supported the establishment of a national dosimetry audit system and dosimetry quality audit programme in radiation therapy. In food and agriculture, assistance was provided to build capacity in the use of isotope and radiation techniques to improve crops.

IAEA support to Bulgaria, 2009–2019



498 110 318

trained
(including 274 women)

international
experts
provided

attended specialist
meetings
(including 152 women)

Priority areas of support

- Supporting nuclear and radiation safety and security
- Improving the food and agriculture sectors
- Strengthening health and nutrition
- Supporting nuclear knowledge, staff transfer and sustainable development

Bulgaria's contribution to South-South and triangular cooperation, 2009–2019



244
expert and lecturer
assignments provided
by Bulgaria

6
training
courses
hosted

76
fellows or
scientific visitors
hosted

Based on data available as of April 2020

Strategic documents supported

- Country Programme Framework 2018–2023, signed in September 2018

www.iaea.org/technicalcooperation

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