



Key achievements in United Republic of Tanzania

- 2019: The Tanzania Atomic Energy Commission enters the final stages of completing a mega laboratory complex to provide radioanalytical and calibration services.
- 2019: Ocean Road Cancer Institute launches advanced 3D radiotherapy services with its new radiotherapy bunkers, equipment (including advanced linacs), and enhanced staff skills.
- 2018: Bugando Medical Centre launches radiotherapy services for the first time, becoming the second such facility in the country to provide cancer treatment, and expanding access for 15 million more people.

Atoms for peace and development

The International Atomic Energy Agency is the world's central intergovernmental forum for scientific and technical cooperation in the nuclear field. It works for the safe, secure and peaceful uses of nuclear science and technology, contributing to international peace and security.

The IAEA's technical cooperation programme helps countries to use nuclear science and technology to address key development priorities, 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

Cancer control

Various national and regional IAEA projects have expanded access to and quality of radiotherapy services in Tanzania.

In addition to developing its National Cancer Control Strategy in February 2013, Tanzania has recently achieved two major milestones:

The Bugando Medical Centre started cancer diagnosis and treatment in 2018 with a Co-60 external beam radiotherapy machinery and a

brachytherapy machine with a treatment planning system. This makes services accessible to close to 15 million people in the north and north-west parts of the country.

Ocean Road Cancer Institute advanced from 2D to 3D radiotherapy with the construction of new bunkers, and the acquisition of two linac machines and a computed tomography simulator, together with a range of specialist training. IAEA support included long term fellowships and short term on-the-job training, on-site expert services for testing and commissioning of new equipment, and the development of quality control and assurance systems including clinical protocols.

Crop improvement for rice

With IAEA support, Zanzibar deployed a new rice variety called 'SUPA BC' in 2011, developed using nuclear techniques. This was a major milestone that increased rice production from four to seven tonnes per hectare.

The implementation of food and agriculture projects, in particular those focusing on the improvement of rice, have led to the development of research facilities such as tissue culture and molecular biology labs.

The training of local researchers in mutation breeding and biotechnology, with technical assistance provided by specialists, also contributed to the development of SUPA BC and additional varieties of rice, especially those resistant to the rice yellow mottle virus.



Participants extracting DNA at an IAEA supported training course on molecular biology laboratory and application of molecular techniques in plant breeding. Nuclear techniques have helped to increase rice production in Tanzania from four to seven tonnes per hectare. (Photo: L Jankvloski/IAEA)

Active national projects

- Establishing a Graduate School of Nuclear Science and Technology at the Nelson Mandela African Institution of Science and Technology (URT0007)
- Improving Rice and Barley Production through Application of Mutation Breeding with Marker Assisted Selection (URT5030)
- Improving Indigenous Cattle Breeds through Enhanced Artificial Insemination Service Delivery in Coastal Areas (URT5031)
- Developing Maize Cultivars for Improved Yield and Resistance to Viral Disease (URT5032)
- Evaluating the Effectiveness of Infant and Young Child Nutrition Promotion (URT6030)
- Strengthening and Expanding the Cancer Control Programme (URT6031)
- Building Capacity to Assess and Monitor Water Resources Using Isotope Hydrology Techniques (URT7002)

United Republic of Tanzania also participates in 54 regional and 12 interregional projects, mostly in the area of health and nutrition, and food and agriculture.

Previous IAEA support to United Republic of Tanzania

In recent years, the IAEA has provided support to implement the National Cancer Control Strategy.

In cancer therapy, the programme focused on strengthening the Ocean Road Cancer Institute and the Bugando Medical Centre to provide radiotherapy and nuclear medicine services.

In agriculture, mutation breeding is being used to develop improved varieties of rice, barley and maize. For livestock, the capacity built in the Arusha area for the use of artificial insemination will be expanded to include the coastal region. Moreover, capacities are being developed to tap into the benefits of isotope hydrology.

IAEA support to the United Republic of Tanzania, 2009–2019



648 trained
(including 134 women)

60 international experts provided

103 attended specialist meetings
(including 20 women)

Priority areas of support

- Improving food and agriculture
- Strengthening health and nutrition
- Developing water resources management
- Supporting energy and industry
- Improving nuclear and radiation safety and security
- Developing human resources

United Republic of Tanzania's contribution to South-South and triangular cooperation, 2009–2019

83
expert and lecturer assignments provided by Tanzania

387
training course participants

52
fellows or scientific visitors hosted

Based on data available as of April 2020

Cancer control **IMPACT** Review conducted: May 2006

Strategic documents supported

- Country Programme Framework 2018–2022, signed in September 2018
- National Cancer Control Strategy 2013–2022
- Feasibility study for establishing a multipurpose irradiator, 2018
- Report on the review of the Strategic Plan for a New Research Reactor Project in Tanzania, 2016

www.iaea.org/technicalcooperation

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

