



Key achievements in Nepal

- 2020: Nepal adopts and puts into effect its law on the use and regulation of radioactive materials.
- 2017: Tribhuvan University's nuclear research lab set to support nuclear physics curriculum, radiation monitoring and regulatory activities.
- 2016: A nuclear medicine department for the early diagnosis of cancer and other health conditions is established at the BP Koirala Memorial Cancer Hospital in Bharatpur.
- 2016: Nepal's first isotope hydrology laboratory is established to support better management of groundwater resources in the Kathmandu Valley.
- 2015: A molecular biology laboratory in Kathmandu is established to perform effective diagnostic studies on transboundary animal diseases.

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.



Experts from Tribhuvan University and the IAEA investigate possible stray radioactive sources in Kathmandu. The IAEA provided training and technical expertise to the country. (Photo: R. Khanal/Tribhuvan University)

Recent project successes

Non-destructive testing

Nepal received expert advice on applying radiological methods in non-destructive testing (NDT) to ensure the safety and integrity of public buildings damaged by the 2015 earthquake. The IAEA launched an additional project to develop the country's capability in applying other NDT methods, such as radiography, needed for different structures.

Radiation safety infrastructure

Prior to becoming an IAEA Member State in 2008, Nepal did not have a national regulatory infrastructure or nuclear legislation for the control of radiation sources in accordance with international standards. The country also lacked professional expertise in radiation safety.

The IAEA supported the establishment of national infrastructure for radiation safety by developing and strengthening relevant legislative frameworks. Expert guidance was provided for the drafting of a comprehensive nuclear law, which was adopted in 2020, and the IAEA worked to raise awareness of necessary standards with parliamentarians and senior government officials.

Water resource management

The Kathmandu Valley is the most urbanized and populated area of Nepal. Due to rapid urbanization, the quality of its water was degraded and the population also suffered from acute water shortages. The IAEA provided support to use isotope techniques to assess the area's groundwater resources, improved the skills and knowledge of technical personnel, and provided field and laboratory equipment for sampling and analytical testing.

Isotope and geochemical techniques were used to identify how water replenishes the system and to assess its quality. Water samples were analysed in accredited analytical laboratories in the Netherlands and at the IAEA's Seibersdorf Laboratories in Austria. The findings have enabled Nepal to manage the valley's groundwater resources more sustainably and effectively.

Active national projects

- Developing Capacity for Nuclear Physics and Nuclear Chemistry Teaching Programmes at Tribhuvan University (NEP0002)
- Introducing Non-Destructive Testing (NEP1001)
- Enhancing Uranium Exploration and Evaluation (NEP2005)
- Exploring and Evaluating Uranium and Thorium Deposits in the Ampipal Areas (NEP2006)
- Improving Animal Productivity and Control of Transboundary Animal Diseases using Nuclear and Molecular Techniques: Phase II (NEP5004)
- Strengthening Capacity in Veterinary Diagnosis (NEP5005)
- Enhancing Productivity of Crops and Fruit Employing Nuclear and Molecular Techniques (NEP5006)
- Supporting Analysis of Pesticide Residues in Agricultural Products (NEP5007)
- Developing Radiation Health Service Infrastructure (NEP6001)
- Strengthening and Expanding Nuclear Medicine Services (NEP6002)
- Strengthening Modern Applications of Radiation Therapy (NEP6003)
- Establishing a Secondary Standard Dosimetry Laboratory (NEP6004)
- Introducing Nuclear Techniques to Address Childhood Malnutrition (NEP6005)
- Strengthening Nuclear Medicine Services (NEP6006)
- Supporting Radiation Monitoring (NEP9004)
- Strengthening Radiation Safety through Regulatory Infrastructure, Occupational and Medical Exposure Control (NEP9005)

Nepal also participates in 27 regional and 5 interregional projects, mostly in the area of health and nutrition, and food and agriculture.

Previous IAEA support to Nepal

In recent years, support focused on updating radiotherapy and nuclear medicine imaging, increasing crop yields, employing nuclear and molecular techniques to diagnose animal diseases, expanding uranium exploration and evaluation efforts, and improving radiation safety. Training was provided in nuclear physics and chemistry, non-destructive testing and to support radiation monitoring including for emergency preparedness.

IAEA support to Nepal, 2009–2019



317

trained
(including 40 women)

33

international
experts
provided

91

attended specialist
meetings
(including 8 women)

Priority areas of support

- Enhancing human health
- Supporting food and agriculture
- Protecting water and the environment
- Strengthening industrial applications
- Improving regulatory infrastructure and radiation safety
- Supporting nuclear safety and security

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



expert and lecturer
assignment provided
by Nepal

45

training course
participants

Based on data available as of April 2020

Cancer control imPACT Review conducted: October 2012

Strategic documents supported

- United Nations Development Assistance Framework, 2018–2022
- Country Programme Framework 2016–2021, signed in February 2016

In addition, the IAEA supported the upgrade of the University's Nuclear Research Laboratory at the Central Department of Physics and provided training and technical expertise in nuclear and radiation related subjects, including in the preparation of radiological maps.

www.iaea.org/technicalcooperation

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