Thailand

IAEA Member State since October 1957

IAEA Technical Cooperation Programme

Key achievements in Thailand

- 2019: The Synchrotron Light Research Institute's new SLRI-ASEAN beamline station is established for regional research and innovation in industrial applications.
- 2019: A programme to implement IAEA quality assurance and control practices, and standards for nuclear medicine begins in Thailand's main hospitals.
- 2017: A sterile insect technique first deployed in 2014, helped reduce fruit fly infestations and resulted in increased crop yields.

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.

Staff from Thailand's Office of Atoms for Peace are trained to measure radiation at the evacuated zone of TEPCO's Fukushima Daiichi Nuclear Power Station as part of an IAEA Response and Assistance Network workshop. (Photo: S. Lööf/IAEA)

SUSTAINABLE DEVELOPMENT GOALS

Recent project successes

Industrial applications

Thailand is developing its national capacity in industrial research and applications further by expanding the Synchrotron Light Research Institute (SLRI) in Nakhon Ratchasima, the largest institution of its kind in the Association of Southeast Asian Nations (ASEAN) region. The facility supports both national and regional research in areas such as bioplastic production, cultural heritage conservation, and the processing of biological and gemmological samples. This has resulted in Thailand becoming one of Asia-Pacific's leading countries in producing bioplastics, using raw materials from renewable resources such as rice, corn and cassava.

Thailand will also establish a 30 mega-electron volt cyclotron facility at the Thailand Institute of Nuclear Technology to produce radiopharmaceuticals to diagnose and treat diseases such as cancer for patients in Thailand and the broader ASEAN region.

Human health

In 2014, Thailand's first positron emission tomography–computed tomography (PET-CT) and cyclotron diagnosis and treatment centre outside Bangkok was inaugurated at the Chiang Mai University.

Eight IAEA projects have been implemented at the University and other major hospitals in Thailand since 2012, to expand treatment options, train new personnel, and hold safety and quality assurance performance audits. Technical and human resource capacities were developed in nuclear medicine and radiotherapy through expert guidance and training, as well as the provision of state-of-the-art technology.

Food safety

Fruit flies are responsible for major losses to Thailand's crops. To help address this, the IAEA and the Food and Agriculture Organization of the United Nations worked with the Department of Agricultural Extension and the Institute of Nuclear Technology to introduce the sterile insect technique (an environmentally-friendly, radiation-based method of insect pest control), which successfully decreased the prevalence of the fruit flies.

Within a few years, Thai farmers had reduced their use of pesticides and are meeting international export standards. This has resulted in 4000 tonnes of high-quality fruit being sold in markets abroad each year, helping to improve farmers' livelihoods.

Nutrition

The IAEA established capacity at the Thai Institute of Nutrition at Mahidol University to use stable isotope techniques for its nutrition-related studies.

National nutrition advice had previously been based on consolidated international data which did not respond to the country's exact needs. With national scientists now trained to use the doubly labelled water technique for tracing purposes, Thailand has been able to produce its own data which has contributed to the country's new Dietary Reference Intakes guide, which recommends daily levels of healthy nutrients and which foods can fulfil them. The data provides policymakers and nutrition experts with critical information on the population's nutritional needs and the effectiveness of current nutritional interventions.

Active national projects

- Establishing an Accelerator Centre for Research and Education (THA0015)
- Supporting Development of a Multipurpose Research Reactor (THA1012)
- Upgrading the Synchrotron Facility to Support Advanced Scientific and Technical Research and Development Activities (THA1013)
- Strengthening the Capabilities of the Low Energy Electron Beam Facility for Enhanced Economic Competitiveness of Products and Industries (THA1014)
- Establishing a Cyclotron Facility for Radioisotope Production and Industrial Research (THA1015)
- Strengthening Food Safety Laboratory Capacities (THA5056)
- Developing Human Resources for the National Proton Therapy Centre in Thailand (THA6040)
- Enhancing Capacities in Diagnostic Radiology, Nuclear Medicine and Radiotherapy (THA6043)
- Developing Capabilities for the Application of Theranostic Radiopharmaceuticals in Nuclear Medicine (THA6044)
- Enhancing Capability for Nuclear and Radiological Emergency Preparedness and Response (THA9018)

Thailand also participates in 46 regional and 11 interregional projects, mostly in the area of health and nutrition.

IAEA support to Thailand, 2009–2019

890 trained (including 476 women)

154 international experts provided

267 attended specialist meetings (including 147 women)

Priority areas of support

- Improving radiotherapy, radiation diagnostic and nuclear medicine
- Supporting the industrial applications of radiation and nuclear technology
- Enhancing food safety and productivity
- Preparing national capacities for a new and advanced nuclear research reactor

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

135 expert and lecturer assignments provided by Thailand

500 training course participants

174 fellows or scientific visitors hosted

Based on data available as of April 2020

Strategic documents supported

- United Nations Development Assistance Framework 2017–2021
- Country Programme Framework 2017–2022, signed in September 2017

Previous IAEA support to Thailand

The IAEA has previously focused its support on building the capacity of the National Proton Therapy Centre. Further support was extended in the areas of diagnostic radiology, nuclear medicine and radiotherapy, emergency preparedness and response, multipurpose radiation technologies in material applications, building capacities in food safety and developing a multipurpose research reactor.

www.iaea.org/technicalcooperation

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