



Key achievements in Cambodia

- In 2022, Cambodia acceded to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency as a part of its national commitment to the peaceful use of nuclear technology.
- The Drug Residue Laboratory was established in Cambodia in 2018 with the support of the IAEA and the Asian Development Bank.
- Cambodia received 5 sets of COVID-19 detection kits and equipment from the IAEA, considerably enhancing the country's ability to detect the virus early.

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.



National training course on the Basics of Radiation Safety and Protection and the Use of Radiation Detection Instruments. (Photo: Department of Nuclear Science and Technology)

Recent project successes

Radiation Safety

Cambodia is working with the IAEA to improve radiation safety in the country. Since 2018, Cambodia's Department of Nuclear Science and Technology has collected data on the use of radiation sources from over 80 facilities across the country. So far, approximately half of the data collected has been uploaded online into the IAEA's Regulatory Authority Information System.

Around one thousand participants have been trained through three training programmes and ten national workshops on radiation protection and safety and regulatory requirements in the industrial and medical fields.

A Ministerial Circular on the Management of Import and Use of Radioactive Substances and Sources was issued in April 2021, and the Department of Nuclear Science and Technology has finalized a draft of the Technical Guidance on the Safety and Security for the Use of Radiation Sources, following IAEA support in the area of regulatory infrastructure establishment.

Animal Production

Through nuclear techniques, the IAEA supports genetic selection procedures that result in superior breeds of cattle. With IAEA assistance, Cambodia's National Animal Health and Production Research Institute (NAHPRI) has expanded artificial insemination services. Thousands of semen samples from superior cattle have been stored, and thousands of cows have been artificially inseminated.

Following IAEA capacity building, NAHPRI staff have gone on to conduct four training workshops with hundreds of participants on the artificial insemination of cattle. NAHPRI is now providing artificial insemination services to farmers.

Food Safety

The Drug Residue Laboratory was established in Cambodia in 2018 with the support of the IAEA and the Asian Development Bank, and it became fully functional in 2019. The newly established drug residue monitoring programme analyzes approximately 250 meat samples annually from wet markets across the country to ensure the meat available at the markets is safe for human consumption. >>

To enhance food safety, the IAEA supported the training of NAHPRI staff on drug residue analysis. Capacity is also being built in the diagnosis of livestock diseases (including zoonotic and foodborne diseases).

Soil and Water Management

The IAEA has equipped the Soil Science Laboratory in the National Agriculture Laboratory of the General Directorate of Agriculture and it can now complete advanced soil and nutrient analyses. Cambodian researchers are using these analytical services to improve crop yields by measuring fertilizer and water uptake by rice and other crops.

Two rice varieties with high nitrogen use efficiency and high yields have been identified and tested and are now being scaled-up to wider production. New farming practices that use more manure and less inorganic fertilizer have resulted in a 20 per cent increase in rice yields, while also saving farmers a third of the money previously spent on fertilizer.

Plant Breeding

Cambodia has received IAEA assistance in mutation breeding techniques for a local cotton variety.

A researcher from the Prek Leap National Institute of Agriculture (NIA) was trained at the RIKEN Institute in Japan in the application of ion beam irradiation techniques for plant breeding with IAEA support. He went on to train 30 participants at NIA on plant mutation breeding techniques.

3,000 seeds of local cotton (*Gossypium hirsutum*) received different doses of ion beam irradiation at the RIKEN institute, and the resulting seeds were germinated and scored well for plant height and survival rate. About 600 plants were planted at NIA, and the remaining 3,000 seeds were grown at the Cambodian Agriculture Research and Development Institute.

The textile industry plays an important role in Cambodia's economy, and the new mutant varieties are expected to improve farmers' livelihoods and reduce imports of raw materials.

Previous IAEA support to Cambodia

In recent years, the IAEA provided support in capacity building in radiotherapy, the sterile insect technique, water resource management and cultural heritage protection. Projects also contributed to establishing national non-destructive testing capability, strengthening food safety, and enhancing soil and water management for sustainable rice production.

IAEA support to Cambodia 2013-2022



175

trained
(including 21 women)

62

international
experts
provided

251

attended specialist
meetings
(including 20 women)

Priority areas of support

- Legislative framework;
- Radiation and nuclear safety;
- Human health;
- Food and agriculture;
- Water resource management;
- Energy planning;
- Waste management;
- Industrial applications, including cultural heritage preservation;
- Human resource development

Cambodia's contribution to South-South and triangular cooperation 2009-2019



expert and lecturer
assignments provided
by Cambodia

Based on data available as of March 2023

Cancer control iMFACT Review conducted: June 2013

Strategic documents supported

- **SEPTEMBER 2022:** Practical Arrangements with Lao PDR and Viet Nam on 'Strengthening South-South and Triangular Cooperation for Implementation of the IAEA Technical Cooperation Programme'.
- **SEPTEMBER 2022:** Instrument of Accession to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

www.iaea.org/technicalcooperation

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