

The RCA and the Peaceful Application of Nuclear Technology in the Asia-Pacific Region



RCA Regional Office
www.rcaro.org





Regional Cooperative Agreement

For Research, Development and Training Related to Nuclear Science and
Technology for Asia and the Pacific





Prosperity and Well-being for the Future



What is the RCA?

The RCA (Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology for Asia and the Pacific) is an intergovernmental agreement among Member States of the International Atomic Energy Agency (IAEA) in the Asia-Pacific region.

The RCA was established in 1972 under the aegis of the IAEA to promote, coordinate and implement cooperative research, development and training projects in the peaceful application of nuclear science and technology among Government Parties and it operates through their appropriate nuclear institutions.



Who are the members of the RCA?

Currently the following 20 countries are the members of the RCA: Australia (AUL), Bangladesh (BGD), Cambodia (KAM), the Peoples' Republic of China (CPR), India (IND), Indonesia (INS), Japan (JPN), the Republic of Korea (ROK), Malaysia (MAL), Mongolia (MON), Myanmar (MYA), New Zealand (NZE), Nepal (NEP), Pakistan (PAK), Palau (PLW), the Philippines (PHI), Singapore (SIN), Sri Lanka (SRL), Thailand (THA), and Vietnam (VIE).



How does the IAEA support the RCA?

Over its lifetime, the IAEA's Technical Cooperation Fund (TCF) has been a major and consistent source of project funding for the RCA. In addition the RCA has received a range of funding from its Government Parties, other States and other international organizations to support the implementation of its projects.



The majority of the RCA projects are implemented and administered through the IAEA Technical Cooperation Programme. Through this programme the IAEA also facilitates the provision of technical support and project management services, including project formulation, planning and evaluation.



What are the main activities of the RCA?

The main activity of the RCA is implementing cooperative projects, which help build technical capacity within the Government Parties through transfer of technical knowledge, experience and information sharing. This is undertaken using a range of modalities such as training courses, expert services and technical meetings and consultations. Projects may contain a research component, though they are not primarily research projects.



What benefits does the RCA provide?

There are numerous ways in which nuclear science and technology is being applied to solve everyday problems, from basic human needs, such as access to wholesome food, clean water and air, to improved human health, such as improved diagnosis and treatment of diseases, to improved industrial production and decreased industrial pollution.

Nuclear science and technology can be applied in particular in the following areas to benefit the RCA Government Parties:

Agriculture



The projects have assisted RCA Government Parties to achieve enhanced agricultural outputs using nuclear science and technology through the production of better, safer and increased amounts of food.

Modern and competitive plant breeding programmes have been implemented using radiation-induced mutation and efficiency-enhancing bio- and molecular technologies, such as in vitro techniques, molecular markers and genomics. Efforts are focused on improving yield and quality by enhancing the diversification and adaptability of the crops, thus contributing to income generation and socioeconomic development. Such efforts will be increasingly important in allowing farmers to adapt to future climate change.

The Projects also have assisted RCA Government Parties to enhance food safety and security and contribute to increasing the economic benefits through the use of irradiation technology. Projects concentrate on development of guidelines for the accreditation procedures and audit of food irradiation facilities and amendment of quarantine regulations in most RCA Government Parties based on the guidelines.

Food irradiation projects undertaken by the RCA Government Parties have been proven as effective post-harvest treatments that improve food safety and also facilitate international trade. National food security and regional trade in food stuffs has been greatly facilitated by these projects.



Environment



The RCA projects provide Government Parties with knowledge and skills in nuclear science and technology that will help them to better understand and manage water resources and the associated environment, which is central to sustainable development.

Isotope hydrology is used in mapping underground aquifers to improve groundwater management, as well as to investigate contamination events and support recovery efforts. It is also used as a means of improving dam safety and sustainability.

Environmental protection efforts benefit from the use of nuclear techniques to investigate the sources, nature and impacts of pollutants in marine and terrestrial environments, thereby assisting in the management and remediation of contaminated zones.

Advanced nuclear analytical techniques are also utilized for improving air quality in the RCA region by assessment of air particulate matter pollution, and by providing valuable information and insight on the type, level, and main sources of pollution.

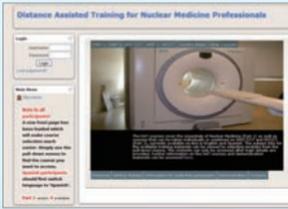




Human health projects aim to provide Government Parties with increased human resource capacity, particularly in terms of training medical professionals, and infrastructure to assist in the prevention, detection and cure of major diseases and illnesses. Projects also support to establish quality assurance programmes for radiation dosimetry and the treatment of cancer, which enhance both the treatment outcomes as well as quality of life for patients.

Cancer kills more than 7.6 million people every year-more than HIV/AIDS, tuberculosis and malaria combined. More than one third of cancers can be prevented and another third are curable if detected early. Nuclear techniques are essential for this effort.

Nuclear medicine and radiology are used to diagnose and treat a variety of diseases, including cancer; radiation is used in sterilizing bone, skin and other tissues required for tissue grafts to heal serious injuries; and medical physics training is helping to improve the quality of health care and patient outcomes.



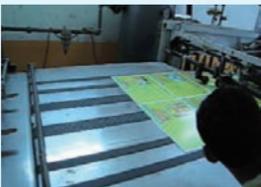
Industry



Nuclear science and technology can be used for both processing and analysis in industry. Radiation processing technology, where materials are exposed to ionizing radiation, is an additive-free process that can change the chemical, physical and biological properties of a material without generating radioactivity.

Nuclear analytical methods are reliable, accurate and in some cases complementary techniques for the characterization of materials and non-destructive testing in quality control processes and quality assurance systems.

Applications of radiation technology include production of radiation-modified natural polymers, which are used in hydrogel wound dressings, materials for tissue engineering applications, metal absorption and soil conditioning, and radioanalytical services.



Where can you get information on the RCA projects?

If you are interested in information on RCA projects, you can contact the RCA Regional Office; general information on the projects can also be found on the RCA website www.rcaro.org. Enquiries can also be directed to the IAEA Technical Cooperation Department www.iaea.org.

Past achievements and success stories of RCA projects are available on the RCA website <http://www.rcaro.org/success>.

If you are interested in applying the RCA's project outcomes and results to your country's policies and needs, you could consult the National RCA Representative of your country, listed on the RCA website.



How can you participate in the RCA projects?

The RCA provides many opportunities for individuals and organizations to participate in its projects. In general, requests for participation are made by completing applications and submitting them to the National RCA Representative of the applicant's country.

The main avenues for participation include: participation as a Resource Institution, provision of Expert Services, participation in Meetings/Workshops/Training Courses, participation as a Supplier of Goods or Services.



What is the RCA Regional Office?

The RCA Regional Office (RCARO) was established in 2002 in Korea for the purpose of providing enhanced visibility for the RCA and developing partnerships with other organizations. The government of Korea has financed the operation of the RCARO since its inauguration.

To enhance awareness of the RCA, the RCARO publishes the RCA Success Stories and Brochures, participates in regional/international events to promote RCA and operates the RCA website, which provides an information resource on the RCA as well as a medium for information exchange and communication.

The RCARO consistently explores Partnerships with other international/regional organizations on behalf of the RCA Government Parties. The RCARO initiated projects with the UNDP (United Nations Development Programme) on the effects of Tsunamis, Nuclear Imaging Technology using PET/SPECT and Electron Beam applications are good examples of this.

The RCARO is also implementing the RCA/KAERI training course, the RCA/KAIST master's degree programme and the RCARO Fellowship program to support the Government Parties in their capability building related to nuclear science and technology.

- * KAERI: Korea Atomic Energy Research Institute
- * KAIST: Korea Advanced Institute of Science and Technology
- * PET: Positron Emission Tomography
- * SPECT: Single Photon Emission Computer Tomography



Do you want to be a partner with the RCA?

The RCA welcomes partnerships with other international and regional organizations. If a peaceful application of nuclear science and technology is considered as the right solution to reaching your project goal, you could consult with the RCA through the RCARO.

For more information on RCA/RCARO, please visit www.rcaro.org or www.iaea.org/technicalcooperation/Regions/Asia-and-the-Pacific/RCA/index.html or send an email to rcaro@rcaro.org.





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