



Regional Cooperative Agreement

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



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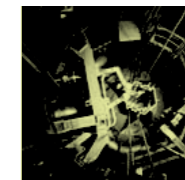


BRINGING PROSPERITY
TO THE ASIA-PACIFIC



Regional Cooperative Agreement

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





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 the International Atomic Energy Agency (IAEA) Member States in the Asia-Pacific region.

Since its establishment in 1972 as the first regional cooperative agreement under the auspices of the IAEA, the RCA has had a long history of providing an effective framework for regional cooperation bringing socioeconomic benefits to the Government Parties and the region. It has not only delivered projects that have transferred a wide range of beneficial nuclear science and technology but it has also demonstrated the power of these technologies to contribute to the sustainable development and enhanced socioeconomic well-being in the region.

Under the umbrella of this Agreement, the Government Parties have effectively steered the RCA Programme to address their specifically identified needs and priorities as well as those of the Asia-Pacific region generally. Through the development of nuclear technology and science, more cost-effective and environmentally sustainable solutions have been able to be applied to address these problem.



RCA Government Parties

The RCA Government Parties (GPs) are the Member States of the IAEA in the Asia-Pacific region who have notified their acceptance of the Agreement to the Agency. Since the RCA first came into force in 1972, twenty-two (22) GPs have entered into the Agreement.

Under the terms of the Agreement, the GPs undertake, in cooperation with each other and with the IAEA, to promote and coordinate cooperative research, development and training projects in nuclear science and technology that can improve the living conditions of the people and contribute to preserving the nature in the region.





The GPs are represented by the designated National RCA Representatives (NRs) who are the principal contact points and, jointly in consensus, take all the decisions for the operation and implementation of the RCA Programme. The NRs participate in two major annual meetings, namely the Meeting of National RCA Representatives

(NRM) and the General Conference Meeting (GCM), which are the decision-making fora. Acting on behalf of their GPs at these meetings, the NRs consider policy issues, development priorities, overall management of the RCA Programme and other relevant matters.

Vision

The RCA shall be recognized as an effective partner in providing nuclear technologies that enhance socio-economic wellbeing and contribute to sustainable development in the region.

Mission

-  Identify and implement nuclear technologies that address regional priority needs
-  Encourage sustainability of nuclear technology capacities in the RCA Government Parties and to ensure effective transfer of those technologies and associated technical know-how to end-users
-  Coordinate cooperative research in applications of nuclear science and technology in support of agreed regional priority needs
-  Promote the benefits of nuclear technologies to appropriate end-users and decision makers, and identify potential partners and funding mechanisms to support an expanded RCA Programme
-  Develop regional networks for information and experience sharing, mutual assistance and resource mobilization

Milestones

- 1972
● Establishment of the RCA
- 1973
● Launch of the first regional cooperative project
- 1997
● Adoption of the RCA Guidelines and Operating Rules (GOR)
- 2002
● Establishment of the RCA Regional Office (RCARO)
- 2006
● Formulation of the RCA Medium-Term Strategy (MTS)
- 2013
● Establishment of the RCA Programme Advisory Committee (PAC)
- 2022
● 50th Anniversary of the RCA
● 20th Anniversary of the RCARO

RCA

KEY NUMBERS

USD **90** Million

173
Cooperative Projects

562
Meetings & Workshops

658
Training Courses

10,000
Trained Professionals

4,500
Experts & Lecturers

Management and Operational Support for the RCA and Its Programme

The RCA GPs establish various ad hoc committees and working groups composed of their experts to provide advice and insight on a variety of issues related to the management and operation of the RCA Programme.

In addition, the RCARO provides a wide range of support to the RCA Programme and the RCA GPs, including administrative support to the IAEA, through a formal administrative arrangements.

RCA Programme Advisory Committee

The RCA Programme Advisory Committee (PAC) consists of highly qualified and experienced individuals from the GPs, who provide advice to the NRs on planning, management and direction of the RCA and its Programme as well as other related matters. It contributes to identification and

recommendation of project ideas, concepts and designs of the cooperative projects and also coordinates the development of the RCA Regional Programme Framework (RPF) in cooperation with the other relevant stakeholders, namely the RCA Chair, RCA Focal Person and Working Groups on the RCA Medium-Term Strategy.

Working Group on RCA Medium-Term Strategy Coordination

The RCA Medium-Term Strategy (MTS) is a key strategy plan for improving the efficiency and effectiveness of the RCA Programme. It articulates how the RCA could effectively discharge its Mission and contribute to the development goals of the GPs. The Working Group on RCA MTS Coordination (MTSC) was established, consisting of members from

the GPs with a wide range of skill sets and knowledge on RCA instruments and processes to review and provide recommendations on milestones of the MTS to assist with effective implementation of the MTS. It also explores and identifies strategic directions for resource mobilization and sustainable human resource development in the RCA region.



RCA Regional Office

Along with the expansion of the RCA activities and its membership, the needs for a vehicle to facilitate efficient operation of the RCA and effective implementation of its Programme increased. Thus, the RCA Regional Office (RCARO) was established in 2002 in Daejeon, Republic of Korea, to enhance the ownership of the RCA Programme and contribute to increasing the awareness (Visibility) and international engagement (Viability) of the RCA. Throughout the past 20 years of its operation, RCARO expanded its roles and activities beyond the primary missions for the benefits of the GPs.

With the aim to complement and enhance the RCA Programme, RCARO actively promotes partnerships with other regional/international organizations as well as implements cooperative projects and

activities to contribute to resource mobilization and offer more opportunities to the GPs for collaboration. It also carries out diverse forms of promotional activities to raise the RCA profile to target audiences and operates the RCA website for providing and archiving RCA documents and, further, facilitating information exchange among the GPs.

In 2017, RCARO signed Practical Arrangements with the IAEA in the performance of the RCA secretariat duties and has been supporting the preparation of RCA policy meetings, activities of the RCA PAC and WGs and drafting RCA Annual Reports. Moreover, it provides assistance to the RCA Chair in performing effective Chairmanship.



Partnership with Other Regional/International Organizations

The RCA proactively seeks for strategic partnerships through collaboration with other regional and international organizations in order to create more secure environment for the implementation of its programme and boost its profile.

Strategic partnerships have been achieved with international organizations such as UNDP, UNOSSC and FAO as well as with a host of regional organizations. These links have facilitated mobilization and sharing of expertise, technology and financial resources, enabling and RCA to maximize the impact of its Programme and better respond to regional ad hoc needs. In addition, the RCA can take advantage of the opportunities enhanced through the cooperation to increase its awareness outside of the region as well.

***UNDP:** United Nations Development Programme

UNOSSC: United Nations Office for South-South Cooperation

FAO: Food and Agriculture Organization of the United Nations

IAEA and RCA

The IAEA assists the RCA through provision of technical advice and support as well as major involvement in the implementation of the regional activities. Furthermore, it plays an active role in encouraging policy dialogue on strategic aspects of the RCA Programme, providing assistance to the RCA NRs. Financial support of the RCA Programme is provided through the Agency's Technical Cooperation Fund, as well as through extrabudgetary donations from the GPs and funding from other regional/international bodies.

Based on the firm and shared ownership and commitment of the GPs as well as the strong alignment with the goals and imperatives of the Agency's Technical Cooperation Programme, the RCA and its Programme are widely recognized as an extremely successful example of effective regional cooperation.



RCA Programme

The objective of the RCA Programme is to promote and coordinate cooperative research, development and training projects in the peaceful application of nuclear science and technology. It covers subjects related to isotope and radiation applications in the areas of the RCA strategic priorities, aiming to contribute to achieving the UN Sustainable Development Goals for the Asia and the Pacific region. The RCA Programme consists of different categories of projects and activities to address the development needs of the GPs through diversified approaches. In detail, Technical Cooperation Projects facilitates technology transfer through training courses and expert consultations to enable the GPs to develop the capability for utilizing nuclear technology. Coordinated Research Projects involve networks of national research institutions to conduct researches on themes or problems that are relevant to, or can be resolved with, nuclear science and technology. Other Cooperative Activities offer flexible means to complement the RCA Programme or respond to ad hoc needs in a timely manner.

The RCA Programme is guided and assisted by the RCA Medium Term Strategy (MTS) and the Regional Programme Framework (RPF) in its operation and identifying priority areas for the development of cooperative projects. The two documents are newly developed every 6 years based on the analysis of the RCA Programme and regional status to ensure that the Programme is responsive to the needs of the GPs.

South-South and Triangular Cooperation

South-South cooperation, also known as technical cooperation among developing countries (TCDC), is a framework of collaboration among developing countries for sharing knowledge, technical know-hows and resources with the aim to meet their common or respective development goals. It has been an underlying principle of the RCA Programme to effectively identify and respond to the needs of the countries in similar development stages. Recently, triangular cooperation gained great visibility for facilitating the South-South initiatives through diverse forms of support from the third developed countries or multilateral organizations, such as provision of funding, training and management systems.



Agriculture

Maintaining the security and safety of food supply has been a major challenge in Asia and the Pacific region where the population and the consumer demand for safe, wholesome and nutritious foods are increasing rapidly. The RCA has put efforts in finding solutions for sustainable agricultural development in the region with a holistic approach of applying nuclear technologies to the production cycle of agricultural products from breeding crops to storing processed goods.

Through the RCA projects, plant breeding techniques, for instance radiation-induced mutation, were facilitated to assist the GPs in improving agricultural productivity and environmental sustainability. By applying the techniques in a safe and appropriate way, new crop varieties have resulted in high yields and profitable return to the farmers. In addition, nuclear-technology-applied

fertilizers, such as Plant Growth Promoter (PGP), have been introduced to stimulate better plant immune system of the plants and reduce the environment pollution by deducting the use of chemical fertilizer and pesticide.

In another area, irradiation technology has been applied to enhance food security. It can extend the shelf-life of foods through the reduction of biological contamination of foodstuffs. It has also been very effective in the phytosanitary (plant health) treatment of plants and crops for export. Irradiation has been recognized as a safe and practical technology to secure food safety to foster global trade and economic development of the GPs, and at the same time, respond to the stricter human health and plant health controls worldwide.



Human Health

Human Health

The RCA has undertaken various activities to improve patient care in fighting non-communicable diseases in the region, such as cancer, and to strengthen the workforce and expert network by providing education to professionals and sharing knowledge and expertise among the GPs.

Through RCA projects on nuclear medicine technologies, the developing countries have adopted advanced techniques of imaging and diagnosing disease matters. The imaging technology has allowed the technicians to identify functional and molecular changes in human bodies, enabling them to detect unhealthy conditions of patients and plant treatment at an earlier stage. In addition, the online set of training materials for nuclear medicine professionals made possible through the establishment of Distance

Assisted Training On-Line (DATOL), has made it possible to provide sustainable education even to those physicians who had previously found such access to such training out of reach, due to financial and locational constraints.

Another notable achievement has been the regional improvement in the quality of radiotherapy, a major cancer therapy that has been effective in curing or relieving the cancer symptoms using ionizing radiation. The RCA provided focused training as well as expert consultations on the performance and quality assurance of radiotherapy practices that have contributed significantly to strengthening the human and institutional capacities for radiotherapy enhancing the quality of patient care in the region.



Environment

The onrush of industrialization and urbanization in the Asia-Pacific countries attributed to the shortage of fresh water and clean air, undermining the living conditions of the residents. The RCA has been seeking for integrated solutions through applying nuclear technologies to combat these environmental pollutions.

For instance, to address the scientific and societal issues involving fresh water resources, isotope techniques have been widely promoted to assess the quality of water supplies. The techniques give a direct insight into the movement and distribution processes of pollutants by tracking the indicators of contamination in the water.

Further, the RCA successfully established and upgraded the Asia-Pacific Marine Radioactivity



Environment

Database (ASPAMARD), a comprehensive compilation of radionuclides in the regional seas and marine organisms. This database has taken a role of detecting radiological sources and observing any spatial or temporal trends in the territorial water of the GPs.

Alleviation of air pollution was another challenge that the region confronted. The RCA has implemented projects to transfer highly sophisticated nuclear technologies used to monitor air particulate matters (APM) and analyze microscopic particles of pollutants. It has contributed to facilitating regulations to facilitating regulations on air pollution in some countries, as well as establishing a regional database on air pollutants.



Industry

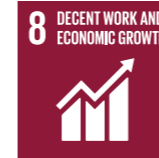
Industry

The RCA has played a pivotal role in applying nuclear technology to industrial sectors of the region. Specifically, RCA projects have contributed to improving the competitiveness of manufactured products through better quality control at low cost.

Radiation processing utilizes ionizing radiation technology to produce advanced materials. The outcomes from R&D activities in this technology has facilitated the introduction of cheaper and environmental-friendly means of production and has led to commercialization of these products. One example of the application ins in the area of radiation crosslinking, which is now widely used for the production of insulated wires and cables, plastic pipes, heat shrinkable tubes and films, plastic foams, hydrogels and automobile tires,

resulting in a wide range of commercial opportunities, income generation and economic development of the region.

Other important applications of radiation techniques in industry are non-destructive testing (NDT), an essential part of the quality assurance in the construction and manufacturing industries, and radiotracers, which are uniquely able to assist online diagnosis of operational problems in processing industries. Through RCA projects, technicians acquired competence in utilizing the techniques, leading to more affordable maintenance services and reliable assessment, and eventually contributing to the sustainable growth of their socio-economy.



Radiation Safety

Radiation Safety



The wide application of ionizing radiation from medicine to industries has brought great advantages in our everyday life but it has also increased the potentials for exposure to radiation sources. It has long been recognized that exposure to high levels of radiation, externally or internally, can result in long-term negative health consequences.

In this regard, the RCA has strongly promoted radiological protection techniques used for controlling medical/occupational exposure and measuring dose uptake. This effort has contributed to reducing expected dose and securing radiation safety of patients and workers. Moreover, it established the groundwork for transboundary networks to facilitate information exchange and communication among the GPs. In particular, the Asia Region ALARA (keeping radiation "As Low As Reasonably Achievable")

Network (ARAN) was established to facilitate the principle of maintaining exposure of the patients and personnel to ionizing radiation at a practically low level.

These RCA's initiatives have supported further expansion of nuclear technologies and their safety. RCA activities are expected to continue to sustain radiation protection, enhancing the safety of the workers, people and the environment of the region.





RCA Website
rcaro.org



RCA 50th Anniversary Website
rca50.rcaro.org



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