

RCARO 2018 Work Performance

	Target	Activities	Milestone				Performance Indicators	Status
			QT 1	QT 2	QT 3	QT 4		
1	Increasing the Awareness of the RCA	1.1. Enhancing RCA Information Service through the RCA Website	████████████████████				1.1.1. Updating Data on RCA and RCA projects	Done - Updated data on RCA meetings and projects
		1.2. Participation in Regional/ International Events and Support for the Promotion of RCA Activities		█		█	1.2.1. Presentation and Exhibition on RCA/RCARO Activities to Target Audiences	Done - Participated in two conferences and IAEA Ministerial Conference
						█	1.2.2. Supporting RCA Experts for Increasing the Awareness of RCA	Done - Supported MAL expert for her promotional activities on 2-6, Sept. 2018
2	Expanding Support for the	2.1. Implementation of RAS6083	████████████████████				2.1.1. Implementing Expert Missions	Done - 7 expert missions conducted in

GPs and Development of RCA						2.1.2. Conducting a Regional Workshop/Progress Review Meeting	THA, PHI, VIE, INS, MON and PAK Done - Project review meeting and workshop on Theranostics held in Apr. in AUL; Workshop on Leadership Skills for Emerging Challenges in Nuclear Medicine held in Nov. at the IAEA; and final review meeting and workshop on Neuroimaging held in Dec. in SIN
						2.1.3. Submission of Progress Report	On-going - PPAR to be submitted to the IAEA by 10 Jan. 2019.
	2.2. RCARO Managed Project: Implementation of a Research Project					2.2.1. Conducting a Research Coordination Meeting	Done - Coordination meeting held on 9-11 May 2018 in ROK
	2.3. Supporting the IAEA					2.3.1. Providing Support for RCA	

		for RCA Administrative Matters					Policy Meetings	Done - Assisted the IAEA in preparing for the 40th NRM and the 47th GCM and hosting the WG meetings
		2.4. Assisting the RCA Chair for Coordination of Activities					2.4.1. Providing Support to the RCA Chair in Performing his/her Duties	Done - Assisted the RCA Chair in performing his duties
3	Enhancing and Exploring Partnerships with Regional/ International Organizations	3.1. Implementation of RCA/UNOSSC Project on Electron Beam (EB) Applications	■				3.1.1. Conducting a Regional Training Course	Done - 18 participants from 11 countries trained in the course held on 5-10 Mar. 2018, in ROK
							3.1.2. Holding a Review Meeting of RCA/UNOSSC Project on Electron Beam(EB) Applications	Done - Mid-term Review Meeting held on 16-18 Oct. 2018, in INS
				■	■		3.1.3. Implementing Expert Missions	Done - Two Expert Missions conducted

		<p>3.2. Exploring Partnerships with the ASEAN</p> <p>3.3. RCA/ARCCNM Training Workshop</p> <p>3.4. Participation in the 19th FNCA Coordinators Meeting</p>	■			<p>■ 3.1.4. Submission of Progress/Financial Reports</p> <p>■ 3.2.1. Conducting Regional Training Course on Cyclotron based Radiopharmaceuticals</p> <p>3.3.1. Holding the RCA/ARCCNM Training Workshop</p> <p>3.4.1. Participation in the 19th FNCA Coordinators Meeting</p>	<p>in MON and SRL</p> <p>Done</p> <p>- Submitted quarterly financial reports and semi-annual progress reports</p> <p>Done</p> <p>- 14 participants from 7 countries trained in the course held on 10-14 Dec. 2018</p> <p>Done</p> <p>- Supported the training workshop held on 22-24 Apr. 2018 in AUL</p> <p>Done</p> <p>- Participated in the meeting on 22 Mar. 2018 in JPN</p>	
4	Assisting the GPs in Addressing Regional and	4.1. RCARO/KAIST Nuclear Engineering Master's Degree Course	■				4.1.1. Supporting the RCARO/KAIST Master's Degree Course	<p>Done</p> <p>- Supported 4 students from BGD, INS and KAM</p>

	National Needs	4.2. RCA/KAERI Regional Training Course				■	4.2.1. Holding the RCA/KAERI Regional Training Course	Done - 17 participants from 11 countries trained in the course held on 15-26 Oct. 2018
		4.3. IAEA/RCARO/KIRAMS Joint Training Course				■	4.3.1. Implementing the IAEA/RCARO/KIRAMS Joint Training Course	Done - 18 participants from 12 countries trained in the course held on 5-16 Nov. 2018
		4.4.RCA/HANYANG Training Course				■	4.4.1. Implementing the RCA/HANYANG Training Course on Radiation Safety	Done - 14 participants from 11 countries trained in the course held on 20-24 Aug. 2018
5	Other Activities	5.1. Participation in the RCA policy related Meetings	■			■	5.1.1. Participation in the 40th NRM and the 47th GCM	Done - Participated in the 40th NRM and the 47th GCM
		5.2. RCARO Fellowship Programme				■	5.2.1. Inviting Fellows from GPs to RCARO	Done - 2 fellows were invited from MYA and VIE

		5.3. Provision of Extra-Budgetary (EB) Contribution				■	5.3.1. Providing Extra Budget for RCA Projects in Financial Needs	Done - Contributed US \$40,000 to RAS6083
--	--	---	--	--	--	---	---	--

RCARO 2018 Work Performance

1. Increasing the Awareness of the RCA

1.1 Enhancing RCA Information Service through the RCA Website

RCARO has continued its efforts to further enhance its website operation, with a view to making it a hub for an information flow within the RCA community.

1.1.1 Updating data on the RCA and RCA projects

RCARO has continued to update the website by uploading the information on the RCA projects and events and the news from the RCA GPs.

In early 2018, there has been an overall upgrade on the website including its design and functions for more effective management of the information. Improvements on the technical capability have been made to accommodate the needs of the visitors, making the website more interactive and user-friendly.

According to the recommendations of the 47th GCM, a new platform for Quadripartite Forum has been established on the website in order to foster the information exchange among the four IAEA regional agreements.

1.2 Participation in Regional/International Events and Support for the Promotion of RCA Activities

RCARO continued its efforts to fulfill its mandate by promoting RCA to target audiences at appropriate occasions through presentations and exhibitions and providing support to RCA experts participating in such promotional activities.

1.2.1 Presentation and Exhibition on RCA/RCARO Activities to Target Audiences

Upon the approval of the 46th GCM, RCARO participated in the following events in 2018;

- 12th Congress of the World Federation of Nuclear Medicine and Biology, 20-24 April 2018, Melbourne, Australia
- Global South-South Development Expo, 28-30 November 2018, New York, USA

At the 12th Congress of the World Federation of Nuclear Medicine and Biology RCARO set up a booth and displayed panels on the overall RCA and its projects in the field of human health, specifically on the nuclear medicine, medical physics and radiation therapy. Project review meeting of RAS6083 was held in conjunction with the event, providing the participants of the meeting with the opportunity to share the views on the recent issues with global partners.

RCARO also attended the Global South-South Development Expo to promote the RCA and was invited to the side event, 'Innovation in Practice, Challenges and Solutions' as a presenter. RCARO delivered a presentation on the RCA/RCARO and the achievements made under the partnership project with the UNOSSC on Electron Beam Applications. In addition, representing the IAEA, Head of Strategy and Partnerships from the TC also attended the side event as a panellist and discussed on how to strengthen South-South and Triangular Cooperation in science and technology.

According to the request of the IAEA and the 40th NRM, RCARO participated in the IAEA Ministerial Conference on Nuclear Science and Technology: Addressing Current and Emerging Development Challenges, from 28 to 30 November, 2018. RCARO held an exhibition on the RCA, displaying panels and sample products that have been derived from RCA projects. During the conference, Workshop on Leadership Skills for Emerging Challenges in Nuclear Medicine was held under RAS6083 where the Director of RCARO delivered a presentation on the RCARO's contribution to the development of nuclear medicine in the Asia-Pacific region.

For the 2019 plan, RCARO conducted a survey of NRs and IAEA and collected information on eight conferences to be held. At the 47th GCM, it was approved that the RCARO participate in the following two events for its promotional activities;

- 6th Asia-Pacific Forum on Sustainable Development (APFSD 2019) (May 2019, Thailand)
- 13th Regional Conference on Nuclear Science and Technology (August 2019, Viet Nam).

In consideration of its budget availability and schedule, RCARO will make necessary arrangements for its participation to the conferences listed above.

1.2.2 Supporting RCA Experts for Increasing the Awareness of the RCA

RCARO has provided its assistance to selected RCA experts for their participation in the regional/international events and their RCA promotional activities to enhance the awareness of the RCA and its activities.

For the cycle in 2018, RCARO supported the selectee from MAL for her participation in the 78th FIP World Congress of Pharmacy and Pharmaceutical Sciences, held on 2-6 September 2018 in Glasgow, United Kingdom. The other selectee from INS will be supported for his participation in the 8th International Conference on Tracers and Tracing Methods (TRACER 8) in Da Nang, Vietnam, of which the event dates have been postponed to 26-28 February 2019.

For the next cycle, RCARO invited GPs for nominations of appropriate RCA experts and received a total of 10 nominations from 4 GPs (BGD, MAL, MON and NEP). According to the guideline, RCARO selected 3 selectees from BGD, MAL and NEP in consultation with SAC. RCARO will make necessary arrangements to support the selectees for their RCA promotional activities in 2019.

2. Expanding Support for the Benefit of the Government Parties and Development of the RCA

2.1 Implementation of RAS6083

Upon approval of the 43rd GCM on developing a pilot project, RCARO, as the LCC of the project, developed and finalized a project proposal entitled 'Improving patient care and enhancing Government Parties capacity in nuclear medicine programs in RCA region'. The project was approved and classified as RAS6083 and is to be implemented for 3 years from 2016, funded by the Korean Government.

2.1.1 Implementing Expert Missions

According to the work plan, 7 expert missions to THA, PHI, VIE, INS, MON and PAK were implemented in 2018. Expert mission to KAM was not implemented due to malfunction of equipment in the nuclear medicine facility.

The materials of the expert missions provided by the respective NPCs were uploaded on the project platform on the RCA website. In addition, a finalized e-learning module on 'Peptide Receptor Radionuclide Therapy (PRRT) for Neuroendocrine Tumor (NETS)' was also installed on the RCA website.

2.1.2 Conducting a Regional Workshop/Progress Review Meeting

A project review meeting combined with a workshop on theranostics was held on 16-20 April 2018 in Melbourne, Australia, in conjunction with the 12th Congress of the World Federation of Nuclear Medicine and Biology (WFNMB) held on 20-24 April 2018. 22 participants including the LCC, NPCs, PMO, TO and a representative from ANSTO participated in the meeting to review the progress made in 2017 and confirm detailed work plan for 2018. In addition, as the project ends in 2018, it was suggested that the educational materials created under the project be transformed into e-learning modules to sustain capacity building of the GPs.

In conjunction with the IAEA Ministerial Conference on Nuclear Science and Technology, a Workshop on Leadership Skills for Emerging Challenges in Nuclear Medicine of RAS6083 was held on 26-30 November 2018. The participants of the workshop shared the status and needs on the role of nuclear medicine techniques in the diagnosis and clinical management of non-

communicable diseases and various leadership approaches for capacity building in the field. Director of RCARO delivered a presentation on, 'RCARO's Contribution to the Development of Nuclear Medicine in the Asia-Pacific Region'.

Final review meeting and workshop on neuroimaging was held from 17 to 21 December 2018 in Singapore. 34 participants including the LCC, NPCs, PMO, TO and local experts participated in the meeting to review the achievements of the project and share knowledge in the applications of nuclear medicine technology in the diagnosis and treatment of dementia. The meeting reviewed and finalized achievement report of the project which encompasses the overall outcomes at both the national and regional level.

The meeting also discussed follow-up actions after completion of the project. Recognizing the e-learning modules as an effective method for continued education of nuclear medicine professionals, participants discussed and identified a list of contents for e-learning modules. Based on the identified areas/contents, the meeting recommended RCARO to develop the e-learning modules in cooperation with relevant experts.

2.1.3 Submission of Progress Report

In line with the guidelines and operating rules of the RCA, RCARO, as the LCC, received NPC reports from participating countries and will submit Project Progress Assessment Report (PPAR) to the IAEA by 10 January 2019.

2.2 RCARO Managed Project: Implementation of a Research Project

Aiming to supplement the RCA Programme and accommodate the needs of the GPs, RCARO initiated a Research Project (RP) on 'Air Quality and Environmental Impact Assessment of Industrial Activities in the Region' under the framework of the RCARO Managed Project.

The project is for 3 years from 2018 and to support the improvement of quality of the environment through the provision of appropriate pollutant data to researchers and relevant stakeholders. 10 GPs participate in the RP: AUL, NZE, ROK as Agreement Holders and BGD, INS, MAL, MON, NEP, PHI and SRL as Contract Holders.

2.2.1 Conducting a Research Coordination Meeting

Research coordination meeting was held for a kick-off of the Research Project on 9-11 May 2018 in Jeju, Korea, inviting 17 participants including Agreement and Contract Holders from 10 GPs, Technical Officer and members of the Research Review Committee (RRC). The meeting reviewed the current status of research activities on air pollution monitoring in the region and defined overall parameters of the project such as baseline data, performance indicators and

expected results. The meeting also finalized detailed work plan on research activities of each country.

In November 2018, the Chief Scientific Investigators (CSIs) submitted annual progress reports to RCARO for review of the RRC. According to the review of the RRC, RCARO made necessary financial contributions to the Research Contract Holders in December 2018.

2.3 Supporting the IAEA for RCA Administrative Matters

Upon the decision of the 45th GCM on the RCARO's assist to the IAEA in its secretariat functions such as preparation of the RCA policy meetings and coordination of WG activities, RCARO assisted the IAEA in preparation for the 40th NRM and the 47th GCM, including preparation of agendas, background documents and 2017 annual report.

Recommended by the 40th NRM to hold meetings for the WG on RCA MTS 2018/2023 Coordination and the WG on the Revision of the Guidelines and Operating Rules (GOR), RCARO organized the meetings from 30 July to 9 August 2018 in Seoul, Korea, consecutively. Chairs and members of the two WGs, RCA PAC Chair, and RCARO participated in the meetings.

2.4 Assisting the RCA Chair for Coordination of Activities

Decided by the 46th GCM on the RCARO's support to the RCA Chair, RCARO provided assistance to the RCA Chair in performing his duties required by the NRM.

3. Enhancing and Exploring Partnerships with Regional/international Organizations

3.1 Implementation of the RCA/UNOSSC project on Electron Beam (EB) applications

RCA/UNOSSC Project on Electron Beam Applications for Value Addition to Food and Industrial Products and Degradation of Environmental Pollutants in the Asia Pacific region (Phase 1) was implemented from 2013 to 2015 in order to promote and disseminate the use of electron beam applications in the region. At the Final Review Meeting in 2015, the participating countries raised and discussed the issue of continuing the project implementation, considering the continuous needs and demands towards the EB technology development in the region.

RCARO submitted a proposal on the extension of the project to the UNOSSC and was approved to implement the project Phase 2 (2017-2019).

3.1.1 Conducting a Regional Training Course

According to the work plan of 2018, a Regional Training Course was conducted on the subject of electron beam applications for shelf-life extension and phytosanitary measures on foods on 5-10 March 2018 in ARTI, Korea, inviting 18 trainees from 11 participating countries. The course provided advanced knowledge and experimental experience on electron beam applications for

shelf-life extension and phytosanitary measures on foods through lectures and hands-on training.

3.1.2 Holding a Review Meeting of the RCA/UNOSSC Project on Electron Beam Applications

Mid-term Review Meeting was held on 16-18 October, 2018, in Bali, Indonesia, in conjunction with Technical Workshop on Electron Beam Applications. During the meeting, the project achievements to date at regional and national level were presented and details of the work plan for 2018-2019 were confirmed.

The workshop also reviewed recent issues related to the EB applications in the region according to the thematic sector and introduced best practices on the establishment of EB facilities and the commercialization of their products.

3.1.3 Implementing Expert Missions

Expert Missions to Mongolia and Sri Lanka were completed in May and August of 2018 respectively. Both Expert Missions included open seminars on the treatment of wastewater for the local experts and site-visits to the facilities where the dispatched experts provided on-site consultations.

3.1.4 Submission of Progress/Financial Reports

Upon the rules and regulations of the UNOSSC, quarterly financial reports and semi-annual progress reports have been submitted.

3.2 Exploring Partnerships with the ASEAN

3.2.1 Conducting Regional Training Course on Cyclotron based Radiopharmaceuticals

Regional Training Course on Cyclotron base Radiopharmaceuticals was held on 10-14 December 2018 for capacity building in radiation technology for RCA/ASEAN Member States. 14 participants from 7 countries who are involved in the application of radiopharmaceuticals participated in the course. The course provided training to enhance the capacity of the participants in applying cyclotron base radiopharmaceuticals effectively and safely in the clinic with proper background knowledge on the preparation and quality control of radiopharmaceuticals.

3.3 RCA/ARCCNM Training Workshop

Since 2008, RCARO has been supporting the RCARO/ARCCNM Training Workshop to educate nuclear medicine physicians and scientists in the region and further to foster regional cooperation to promote nuclear medicine in those countries.

In 2018, RCARO continued to support the training course held on 22-24 April in Melbourne, Australia.

3.4 Participation in the 19th FNCA Coordinators meeting

On behalf of RCA, RCARO participated in the 19th FNCA Coordinators Meeting held on 22 March 2018 in Tokyo, Japan, to introduce the activities in the RCA and discuss the means for cooperation between the RCA and the FNCA.

Representing the RCA, Director of RCARO delivered a presentation on the achievements of the RCA and cooperative activities with the FNCA in 2017.

4. Assisting the Government Parties in Addressing Regional and National Needs

4.1 RCARO/KAIST Nuclear Engineering Master's Degree Course

In cooperation with Korea Advanced Institute of Science and Technology (KAIST), RCARO has supported the young scientists in the region for their capacity building in nuclear science and technology through Nuclear Engineering Master's Degree Course. Since 2003, 32 students from the GPs have been invited and have graduated the Master's Degree Course in KAIST successfully.

This year, a total of 4 students have been supported by the programme, two students from BGD, one each from INS and KAM for their study at the KAIST.

4.2 RCA/KAERI Regional Training Course

Since 2008, RCARO has been hosting a regional training workshop in cooperation with Korea Atomic Energy Research Institute (KAERI). In 2018, Introductory Workshop on Radiation Technology and its Applications was held on 15-26 October, inviting 17 participants from 11 RCA GPs.

4.3 IAEA/RCARO/KIRAMS Joint Training Course

As the countries at the beginning stage in applying radiation technologies have become new members of the RCA, there have been demands for safety training for better usage of the radiation technologies in the region. Since 2016, initiated by the IAEA, RCARO has been implementing a joint training course on radiation safety in cooperation with the IAEA and relevant institutes in Korea such as Korea Institute of Nuclear Safety (KINS) and Korea Atomic Energy Research Institute (KAERI).

In 2018, RCARO, in consultation with the IAEA, hosted a 'Joint Training Course on Internal Dose Assessment and Bioassay Methods in Assessing Occupational Intakes of Radionuclides' supported by Korea Institute of Radiological & Medical Sciences (KIRAMS) on 5-16 November in Seoul, Korea, involving 18 participants from 12 countries.

The training course was organized for the professionals involved in the medical field with lectures on the methodologies and techniques used for direct and indirect measurements of internal

exposure to radioactive material, covered topics on pre-analytical, analytical and post-analytical protocols inside a Quality Assurance programme.

4.4 RCA/HANYANG Training Course on Radiation Safety

Considering the importance of the safety in the application of radiation technology, RCARO hosted a training course on radiation safety on 20-24 August 2018 in Seoul, Korea, in cooperation with the Innovative Technology Center for Radiation Safety (iTRS) of Hanyang University, inviting 14 participants from 11 RCA GPs. The course provided introductory lectures on the radiation safety, such as radiation safety regulation, medical/industrial radiation safety and control, transportation of radioactive materials and emergency preparedness.

5. Other Activities

5.1 Participation in the RCA policy related meetings

RCARO participated in the RCA policy related meetings including the 40th NRM in March and the 47th GCM in September and made presentations on the RCARO activities. RCARO also served as a secretariat for the RCARO SAC meetings prior to the meetings above.

5.2 RCARO Fellowship Programme

In RCARO Fellowship Programme 2018, three fellows from MYA, VIE and INS were invited to work in RCARO for two months each. Fellows from MYA and VIE had successfully completed the programme in April and June respectively. They have contributed to implementing RCA promotional activities; organizing regional meetings and events; and updating data on the RCA website. A fellow from INS was expected to join the RCARO in July but she withdrew her application due to a position change in the institute.

5.3 Provision of Extra-Budgetary (EB) contribution

RCARO made an extra-budgetary contribution of US\$40,000 to support RAS6083.

5.4 Financial Report on “other cooperative activities”

Project Name	Budget (EUR)
RCARO Managed Projects: RCARP01	79,969
RCA/UNOSSC Project	131,618
Total	211,587