

## **RCARO Director's Report on the Progress of the 2019 Work Plan**

### **The 41<sup>st</sup> NRM decisions relevant to the RCARO 2019 Work Plan**

**The Meeting recommended that LCCs for the completed RCA projects send project documents such as meeting reports, teaching materials and PPARs to RCARO for uploading on the RCARO website.**

**Taking note of the strong support at both national and regional level, the Meeting recommended the publication of an RCA Success Story on the achievements of successive RCA projects on air pollution over a series of TC cycles.**

**Pre-project concepts for the 2022-2023 TC Cycle are developed by the NRs and placed on the RCARO website.**

**The Meeting approved the recommendation of the SAC for appointment of the next Director of RCARO.**

## **1. Increasing the awareness of the RCA**

### **1.1 Increasing the awareness of the RCA through promotional materials**

Since 2003, RCARO has published the RCA brochure and Success Stories which have greatly contributed to enhancing the awareness of the RCA and its achievements. Over the past years, they have been distributed to target audiences at international/regional events by the RCARO and the Government Parties for promotional purposes.

The brochure introduce the RCA and its programme including its overall impact, whilst the Success Stories describe how specific RCA projects have contributed to solving regionally shared problems and the socio-economic benefits they have brought to the region through the application of nuclear technologies.

#### **1.1.1 Publication of RCA brochure**

As approved by the 41st NRM, RCARO drafted the contents reflecting inputs received from RCA expert. The draft contained the general information of the RCA and achievements of the RCA Programme that contributed to the development in the region. The final version is to be circulated at the 29th SAC and the 48th GCM for comments and approval for publication.

Upon the approval of the 48th GCM, RCARO will publish the brochure and distribute it to target audiences for promotional purposes on appropriate occasions. The electronic version of the brochure will also be uploaded on the RCARO website.

#### **1.1.2. Publication of the 7th batch of RCA Success Stories**

Since 2007, RCARO has published 6 batches of RCA Success Stories with the aim of showcasing the achievements of the RCA and promoting benefits/advantages of the nuclear science and technology in various fields: a total of 21 including 3 leaflets for agriculture, 5 leaflets and 2 booklets for environment, 3 leaflets and 1 booklet for health, 4 leaflets for industry, 2 leaflets for energy and 1 leaflet for radiation protection.

For the 7th batch of Success Stories, RCARO submitted a plan to publish the Success Stories among the RCA projects which had been successfully completed in 2015-2018 and the plan was endorsed by the 41st NRM.

In accordance with the mechanism and procedure approved by the 37th NRM in 2015, the information on candidate projects was provided by the RCA-FP to the SAC and the SAC Chair circulated the list of candidate projects to the NRs for prioritization.

Based on the decision of the NRs, RCARO will make two Success Stories with the selected projects in leaflet form in consultation with RCA-FP, IAEA TO, LCCs and relevant experts. The final drafts will be submitted to the 42nd NRM for comments and approval.

## **1.2 Enhancing RCA information service through the RCARO Website**

RCARO continued its efforts to further enhance its website operation in 2019, with a view to making it a hub for an information flow within the RCA community.

### **1.2.1 Updating data on the RCA and RCA projects**

RCARO continued its efforts to further update the data on the RCA and its activities: meetings, projects, and news.

At the 41st NRM, it was recommended that LCCs of the completed RCA projects send the project documents to the RCARO for uploading on the RCARO website. In this regard, RCARO has upgraded the project platform on the website to accommodate the project documents.

In relation to the uploading of pre-project concepts for the 2022-2023 RCA Programme on the RCARO website, RCARO created a new menu on the website where GPs can download the template and upload the pre-project concepts in each RCA thematic sector: <http://www.rcaro.org/concept2022-2023>. RCARO also provided updates on the uploaded pre-project concepts to the GPs.

## **1.3 Participation in regional/international events and support for the promotion of RCA activities**

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

### **1.3.1 Presentation and exhibition on RCA/RCARO activities to target audiences**

RCARO participated in the two conferences below as planned. The RCA brochure, Success Stories and RCA video were used for promotional purposes in the events.

- 6th Asia-Pacific Forum on Sustainable Development (APFSD 2019), 27-29 March 2019, Thailand
- Vietnam Conference on Nuclear Science and Technology (VINANST-13), 7-9 August 2019, Vietnam

For 2020 plan, RCARO conducted a survey for possible events and collected information on 6 conferences. In consultation with SAC, RCARO will select possible conferences to attend in 2020.

### **1.3.2 Supporting RCA experts for increasing awareness of the RCA**

RCARO continued to provide its assistance to selected RCA experts for their participation in regional/international events and their RCA promotional activities.

In 2019, three applicants from BGD, MAL and NEP were selected, but one from BGD withdrew her application due to personal reasons.

RCARO supported the expert from MAL for his participation to the conference and will support the expert from NEP as planned.

For the next cycle in 2020, RCARO invited the GPs for nominations of appropriate experts and received a total of 12 nominations from 5 GPs (BGD, INS, KAM, MAL and SRL).

According to the guidelines of the programme, RCARO will select appropriate experts in consultation with SAC.

## **2. Expanding support for the benefit of the Government Parties and development of the RCA**

### **2.1 RAS6083: Extended support for sustainability of the project**

RCARO had carried out the RCA Project: RAS6083 on “Improving patient care and enhancing GPs capacity in nuclear medicine programmes in RCA region” as the LCC from 2016 to 2018.

At the mid-term and final review meeting in 2018, it was suggested that the educational materials created under the project be transformed into e-learning modules for sustained educational support for the participating countries.

Considering the demands and needs for continued education on the nuclear medicine, RCARO decided to support the countries by developing e-learning modules in 2019-2020 as a follow-up of RAS6083.

### **2.1.1 Holding expert meeting(s)**

RCARO organised an expert meeting for development of e-learning modules on nuclear medicine on 24-26 April 2019 in Busan, Korea, inviting 14 experts including the alternate LCC, NPCs of RAS6083 and nuclear medicine experts from the GPs. The LCC of RAS6093\* also participated in the meeting in order to avoid any duplication with the e-learning contents to be developed under RAS6093.

The meeting reviewed and finalised the areas and contents, identified experts for each area and set up detailed plan.

For effective module development, the meeting established a guideline on procedures and structure, format of the module and a review panel, consisting of experts from each area, for quality assurance purposes.

Taking advantage of the ARCCNM training workshop to be held on 3-7 February 2020 in the Philippines, an expert meeting is planned during the workshop to discuss and set detailed work plan for 2020.

\* RAS6093: Strengthening Capacity to Manage Non-Communicable Diseases Using Imaging Modalities in Radiology and Nuclear Medicine

### **2.1.2 Development of E-learning materials**

At the expert meeting, it was agreed to develop e-learning modules on a total of 30 topics in 5 areas in 2019, namely Neurology, Oncology, Endocrinology, Cardiopulmonary and Physics.

Draft modules will be developed by the experts identified at the meeting and will be reviewed by the review panel.

Finalised modules will be uploaded onto the e-learning platform on the RCARO website. RCARO is in the process of improving and upgrading the e-learning platform to facilitate more user-friendly access to the website for the GPs.

## **2.2 RCARO Managed Project: Implementation of a Research Project**

Aiming to supplement the RCA Programme and accommodate 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 with the aim of supporting the improvement of quality of the environment through the provision of appropriate pollutant data to researchers and relevant stakeholders.

12 GPs participate in the Research Project, namely AUL, NZE, ROK as Agreement Holders and BGD, CPR INS, MAL, MON, MYA, NEP, PHI and SRL as Contract Holders.

### **2.2.1 Conducting a research coordination meeting**

With the support of the Mongolian Government, RCARO organized the research coordination meeting on 24-26 June 2019 in Ulaanbaatar, Mongolia, inviting 21 participants including Agreement and Contract Holders from the 12 GPs, Technical Officer and Chair of the Research Review Committee (RRC). The meeting reviewed the project progress and confirmed work plans for 2019-2020. In conjunction with the meeting, a technical workshop was held to share experiences/trends and enhance knowledge in the research on the applications of nuclear analytical technologies for alleviating air pollution.

The meeting noted a good progress of the project in accordance to the performance indicators. As of June 2019, most of participating countries collected and produced analytical results of air samples and identified industrial pollutants.

In addition, participating countries trained 33 staffs on the nuclear analytical techniques and also actively carried out collaborative research activities. INS conducted a fellowship for NEP Chief Scientific Investigator (CSI), signed a MoU with NEP for sample analysis and agreed to provide a Gent sampler to NEP. AUL, INS, PHI, SRL, ROK and MAL also supported analysis and interpretation of the samples bilaterally.

CSIs also refined national work plans for 2019-2020, reflecting inputs at the meeting. CSIs from CPR and MYA, newly joined the project in 2019, also participated in the meeting and revised their work plans in consultation with other CSIs and RRC.

The meeting also discussed the possibility of the 2nd phase of the project, noting strong needs by the participants on the extension of the project and the expansion of research areas that include the analysis and understanding of pollutant sources not only in the air but also in other environmental samples such as water, soil and crops near industrial area.

A proposal was drafted for the 2nd phase for 2021-2023 at the meeting. Upon the approval of NRs on the extension, RCARO will make necessary arrangements for the project.

The next coordination meeting will be held in November 2020, possibly either in MAL, INS or BGD in consultation with the respective NR and CSI.

### **2.3 Supporting the IAEA for RCA administrative matters**

RCARO supported the IAEA in its RCA secretariat functions in terms of preparation and coordination of the 41st NRM and the 48th GCM, including preparation of agendas, background documents and 2018 RCA Annual Report.

### **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.

## **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 technology in the areas of agriculture, industry and environment treatment. Considering the continuous needs and demands of the participating countries for a follow-up project, a proposal for RCA/UNOSSC project (Phase 2) was submitted to the UNOSSC and was approved for implementation of three years, 2017-2019, with a total budget of US\$500,000.

15 RCA GPs, ROK as the lead country, participate in the project. (BGD, KAM, IND, INS, MAL, MON, MYA, NEP, NZE, PAK, PHI, SRL, THA, and VIE)

### **3.1.1 Conducting a regional training course**

Regional Training Course on Advanced Knowledge on Advanced Knowledge and On-site Training on Electron Beam Applications for Advanced Materials was held from 10 to 14 June 2019, in Advanced Radiation Technology Institute (ARTI), Jeongseup, Korea, inviting 16 participants from 12 countries. The course provided advanced knowledge through lectures and hands-on experiments for advanced materials. Results of satisfaction survey showed that trainees were highly satisfied with the course and gained scientific and technical benefits in understanding the overall principles of electron beam acceleration and its applications on the subject

### **3.1.2 Implementing Expert Missions**

According to the work plan, Expert Mission to VIE was conducted on 4 to 7 March, involving 42 participants from Research and Development Center for Radiation Technology (VINAGAMMA), local universities and other related private sectors. The dispatched experts shared their know-hows and experiences on applications of EB technology through a national workshop, technical visits, on-site consultations, and meetings. The Mission was successful in providing evaluation on the possibility of the utilization of EB technology for treatment of textile wastewater and crosslinking of wire and cable.

Expert Mission to BGD will be conducted in September.

### **3.1.3 Holding an annual review meeting of the RCA/UNOSSC project on electron beam applications**

Project annual review meeting in conjunction with technical workshop will be held on 4-7 November in Korea.

### **3.1.4 Submission of progress/financial reports and publication of a final report**



Upon the rules and regulations of the UNOSSC, progress and financial reports have been and will be submitted to the latter accordingly.

### **3.2 Exploring partnerships with the ASEAN**

To fulfil its mission, “viability: to promote partnerships for RCA Program”, RCARO has put efforts on seeking partnerships with international and regional organizations. In line with these efforts, RCA-ASEAN Project on Capacity Building in Radiation Technology was implemented in 2016-2018, contributing to the capacity building of ASEAN countries in the medical area through training courses, specifically in the field of radiotherapy.

\*ASEAN: Association of Southeast Asian Nations, 10 member countries such as INS, KAM, LAO, MAL, MYA, PHI, SIN, THA, VIE, Brunei

#### **3.2.1 Implementation of a training course with the ASEANTOM**

Aiming to expand the RCA-ASEAN partnership and considering that ASEAN's one of the focused areas is enhancing nuclear safety and security, RCARO has discussed possible collaborative activities with the ASEANTOM (ASEAN Network Regulatory Bodies on Atomic Energy). It was agreed that in 2019, RCA-ASEANTOM joint training course be held in the area of emergency preparedness and response, reflecting the current needs and demands of the ASEAN community. Experts from ASEANTOM and Korea have had close consultations on the details of the programme and decided to have a specified and focused training on radiation monitoring and dose assessment following nuclear and radiological emergency.

In relation to this, RCARO was invited to the 6th ASEANTOM Annual Meeting held on 7-10 July 2019 in Thailand and proposed the plan for the training course and further future collaborations, specifically the launch of a new collaborative project, “Enhancing Emergency Preparedness and Response Capabilities in the ASEAN Region through Building Technical Capacity in Radiation Monitoring and Dose Assessment.” The ASEANTOM welcomed and approved the initiative both on the training course and the new project.

Regional Training Course on Rapid Radiation Measurement and Individual Dose Assessment following Nuclear & Radiological Emergency will be held on 7-11 October 2019, in Bangkok, Thailand, in collaboration with the Office of Atoms for Peace, Thailand.

Detailed work plan for the new project will be established upon consultation with regional experts and relevant stakeholders.

### **3.3 RCA/ARCCNM training workshop**

Since 2008, RCARO has been supporting the RCA/ARCCNM training workshop to educate nuclear medicine physicians and scientists in developing and less developed Asian countries and further to foster regional cooperation to promote nuclear medicine in those countries.

RCARO continued its support for the concerned training workshop on 9-11 May 2019 in China.

### **3.4 Participation in the 20th FNCA Coordinators meeting**

On behalf of RCA, RCARO participated in the 20th FNCA Coordinators Meeting held in March 2019 in Japan and discussed cooperative matters between RCA and FNCA.

Representing the RCA, Director of RCARO presented the achievements of RCA and cooperative activities with the FNCA in 2018.

## **4. Assisting the Government Parties in addressing regional and national needs**

### **4.1 RCARO/KAIST Nuclear Engineering Master's Degree Course**

In 2019, RCARO supports three students from BGD, MAL and CPR for their study at the KAIST.

### **4.2 RCA/KAERI training course**

RCARO will host a regional training course on radiation applications technology on 7-11 October 2019 in cooperation with the Korea Atomic Energy Research Institute (KAERI). The GPs will be requested to recommend appropriate candidates for the training course.

### **4.3 IAEA/RCARO workshop**

As the countries at the beginning stage in applying radiation technologies have become new members of the RCA, there have been demands for human resource development for better and safer use of radiation technologies in the region.

Since 2016, initiated by the IAEA, RCARO has been implementing training courses and workshops on radiation safety in cooperation with the IAEA and relevant institutes in Korea such as KINS, KAERI and KIRAMS.

In 2019, RCARO, in consultation with the IAEA, hosted the Regional Workshop on Regulatory Body Communication and Consultation with Relevant National Stakeholders on 8-12 July 2019 in Daejeon, Korea. The event was organized under the IAEA technical cooperation project RAS/9/089 on “Strengthening Radiation Safety Infrastructure” inviting 13 participants, mainly management and communication officers, from 10 participating countries.

The workshop consisted of lectures and working group sessions which provided the participants with necessary information and practical trainings on developing and implementing communication and consultation mechanisms that can effectively control radiation facilities and activities to ensure the safety of workers, public and the environment.

#### **4.4 RCA/iTRS training course**

Considering the importance of the safety in the application of radiation technology, RCARO organized a training course on radiation safety on 1-5 July 2019 in Seoul, Korea in cooperation with Innovative Technology Center for Radiation Safety (iTRS) of Hanyang University, inviting 14 participants from 10 RCA GPs. The course covered various subjects related to the radiation safety, such as radiation safety management, medical/industrial radiation safety and control and transportation of radioactive materials.

### **5. Other activities**

#### **5.1 Selection and appointment of the next Director of the RCARO**

The 41st NRM approved the appointment of Mr. Pill Hwan Park as the new Director of the RCARO.

#### **5.2 Participation in the RCA policy related meetings**

RCARO participated in the RCA policy related meetings including the 41st NRM and the 48th GCM and made presentations on the RCARO activities. RCARO also provided assistance to the operation of the RCARO SAC meetings as the secretariat.

In addition, RCARO participated in the meetings of the RCA PAC and the WG on MTSC to support their activities.

### **5.3 RCARO Fellowship Programme**

Three fellows from MAL, SRL and CPR were selected as participants to the RCARO Fellowship Programme. Fellows from MAL and SRL have successfully completed the programme in April and June respectively. Their duties included collecting information on regional and international event; publication of RCA Annual Report for public; and assisting in the implementation of the Research Project and RCA/UNOSSC project carried out by RCARO.

A fellow from CPR is expected to join the RCARO in September.

### **5.4 Update of the Regional Resource Unit (RRU) information**

According to the work plan of the WG on MTSC on updating the RRU information on the RCARO website, RCARO has uploaded the RRU information to the RCARO website, extracted from the Project Participation Forms received by the RCA FP.

### **5.5 Provision of Extra-Budgetary (EB) contribution to the IAEA**

The contribution will continue in 2019 to support RCA projects in need of financial support, subject to the budget availability of the RCARO.