

## **RCARO Director's Report on the Progress of the 2022 Work Plan**

### **The 44<sup>th</sup> NRM decisions relevant to the RCARO 2022 Work Plan**

**The Meeting took note of the report of the 34<sup>th</sup> Meeting of the RCARO SAC delivered by the RCARO SAC Chair and endorsed its recommendations of**

- RCARO's taking further actions in accordance with the future directions in diversifying cooperative activities, applying the new trends and technologies for capacity building of the new generations, providing comprehensive information service through the Integrated Information System and solidifying the foundation of the RCARO**
- publicizing the first issue of the RCA Newsletter on the RCA website and distributing the hard copies during the event of the 50<sup>th</sup> Anniversary of the RCA.**

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

### **1.1 Provision of RCA information through the RCA Website**

#### **1.1.1 Establishment of an integrated information system**

While continuing its role as a repository for overall information and documents on the RCA and its activities, RCARO has established an integrated information system by developing new platforms, namely RCA E-Campus, DATA-HUB, RCARO E-Management Service(ROEM), with the aim to provide expanded nuclear science and technology information and comprehensive online services to the RCA Government Parties.

The platforms are in test operation and expected to launch in the fourth quarter of 2022.

Government Parties will be provided with guidance on how to use the system and encouraged to provide information on the RCA and its related data, aiming to enhance information exchange through the system.

#### **1.1.2 Update data on the RCA and its projects on the RCA Website**

RCARO continued its efforts to further update the data on the RCA and its activities: meetings, projects, and news. Resource documents for development of RCA Programme cycle 2024/2025 have been uploaded on the website for information of the RCA stakeholders.

For uploading information and documents of RCA projects, RCARO will request the LCCs of on-going and completed projects for updates and materials generated under each project in later this year.

### **1.2 Publication of Newsletters**

The first issue of the RCA Newsletter, containing congratulatory messages and articles from the IAEA and RCA experts was published in March 2022 and distributed to around 600 stakeholders.

The second issue was prepared as a special edition for the 50<sup>th</sup> Anniversary of the RCA. It contained articles on the works and efforts of the RCA and its stakeholders for preparation of the 50<sup>th</sup> Anniversary of the RCA. In particular, it focused on providing the latest information and provisional agenda for the ceremonial events, namely the RCA Ministerial Level Meeting and the RCA Exhibition, to be held in September 2022 during the 66<sup>th</sup> IAEA General Conference, to the potential participants, including the delegates from the RCA GPs, IAEA and other RCA stakeholders. After review and approval of the RCA Newsletter Committee, the final version of the second issue of the RCA Newsletter has been distributed via email and uploaded on the RCA website in early September to maximize its promotional effect for celebration of the 50<sup>th</sup> Anniversary of the RCA.

Along with the other promotional materials, such as the reports of social and economic impact of the RCA Programme, RCA and RCARO brochures, etc., hard copies of the first two issues of the

RCA Newsletter will be distributed to the participants and visitors to the RCA Exhibition and ceremonial events. Contacts of those who would like to subscribe the RCA Newsletter will also be collected at the RCA Exhibition booth as a way to expand its reach to the other potential partners.

Planned to be published after the 66<sup>th</sup> IAEA General Conference ends, the third issue of the RCA Newsletter will include sketches from the RCA Ministerial Level Meeting and the RCA Exhibition as well as notable outcomes from the 51<sup>st</sup> RCA General Conference Meeting.

An annual meeting of the Editorial Advisors and RCARO will be held in early 2023 to set provisional plan for the RCA Newsletter in 2023 and discuss potential ways to enhance its impact.

## **2. Enhancing and exploring partnerships with regional/international organizations**

### **2.1 Developing a partnership project/activity with relevant organizations**

RCARO continued exploring partnerships with regional/international organizations in view of providing more benefits and opportunities to the GPs through developing partnership projects/activities.

#### **2.1.1 Development of a follow-up project/activity of the RCA/UNOSSC project on EBeam technology**

In response to the recommendation of the 32<sup>nd</sup> RCARO SAC Meeting that RCARO seek possible ways to carry out follow-up partnership activities or projects, RCARO explored opportunities for partnership with NCEBR (National Center for Electron Beam Research) of Texas A&M University and submitted a concept paper on a new collaborative project to the 33<sup>rd</sup> RCARO SAC Meeting which approved the fast-tracking for the project development.

While the new project preparations are under progress, the Office of Radiological Security (ORS)<sup>1</sup> of the US Department of Energy/National Nuclear Security Administration proposed RCARO to co-organize a regional workshop on adopting of Electron Beam and X-ray Technologies.

Noting the strong needs for development of EBeam technology in terms of human resource and facility development, RCARO, in cooperation with the ORS and the NCEBR, decided to organize a “Workshop on Advancing the Adoption of Electron Beam and X-ray Technologies in Asia and

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<sup>1</sup> As part of its mission, ORS works to encourage the use of accelerator technologies for commercial applications and addresses both the information barrier and the lack of resources related to the operation of these technologies.

the Pacific” from 14 to 18 November 2022 in Daejeon, Korea.

The workshop will provide actionable information to potential end-users and other stakeholders who are interested in adopting machine-based radiation technologies. Renowned experts from technologically developed countries as well as from international organizations will be invited to share their valuable expertise and experiences.

In early August, invitation letters have been sent out to the Government Parties for nominations of relevant participants to the workshop. Necessary arrangements will be made by RCARO in cooperation with the ORS and the NCEBR.

## **2.2 Implementation of the RCARO/ASEANTOM project**

RCARO has been implementing a partnership project with the ASEANTOM (ASEAN Network of Regulatory Bodies on Atomic Energy) titled “Enhancing emergency preparedness and response capabilities through building technical capacity in radiation monitoring and dose assessment following the nuclear and radiological emergencies” since 2020.

Responding to the strong needs on the capacity building on the radiation monitoring from the ASEANTOM and the recommendation of the 33<sup>rd</sup> SAC on seeking for opportunities for a follow-up project/activity, RCARO has developed a three-year project as its 2<sup>nd</sup> phase in cooperation with the experts from the OAP from Thailand and the KRISS (Korea Research Institute of Standards and Sciences) from Korea.

Requested by the ASEANTOM, RCARO participated in the 9<sup>th</sup> ASEANTOM Annual Meeting held virtually on 8-11 August 2022 and shared the project progress with the participants including the ASEANTOM member countries and dialogue partners.

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

### **2.2.1 Holding a project coordination meeting**

A project coordination meeting was held virtually on 24-25 March 2022, attended by 27 participants from 8 countries. The meeting discussed and confirmed the details of the project including the work plan.

### **2.2.2 Development of Virtual Handbook**

According to the work plan, RCARO, in cooperation with the KRISS, will develop handbooks on

operating procedures for radioactivity measurement and dose assessment, to be directly utilized on-site. Based on the input and analysis of the country reports at the project coordination meeting, three types of video tutorials and two handbooks that explain the procedures step by step will be developed. Production will be completed by April 2023 and be circulated to the participating countries.

### **2.3 Implementation of a joint workshop with the ARCCNM**

Since 2008, RCARO has been supporting the RCA/ARCCNM 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 will support for a workshop to be held on 1-5 November 2022 in Seoul, Korea, inviting young nuclear medicine physicians.

### **2.4 Participation in the FNCA Coordinators meeting**

On behalf of the RCA, RCARO has been participating in the FNCA Coordinators Meeting to present the achievements of the RCA and promote cooperation between the RCA and the FNCA. Upon the invitation, RCARO participated in the 22<sup>nd</sup> FNCA Coordinators meeting held on 28 June 2022 virtually and presented the RCA activities and shared views on collaboration with the FNCA. It was agreed that cooperation on specific projects on mutation breeding, radiation oncology, radiation processing & polymer modification and food provenance should be encouraged for possible synergy between the RCA and the FNCA.

## **3. Expanding support for the benefit of the Government Parties**

RCARO has continued its efforts to find ways to expand support and complement the RCA Programme.

Aiming to accommodate the needs of the Government Parties on the research to address regional problems through nuclear science and technology, RCARO has been implementing research projects under the framework of the RCARO Managed Projects since 2018. Through implementation of research projects, RCARO has found a strong demand of the region in the field of collaborative R&D and has submitted a Proposal to the Government of Korea to seek possibility of additional funding for further widening the R&D in the use of nuclear technology. Subject to budget availability, RCARO will develop projects that can identify the regional needs

and issues and address them through facilitating the R&D. Projects will be designed to be flexible, responsive and timely and focus solely on the needs and priorities identified by the RCA Government Parties.

### **3.1 Implementation of RAS9092**

RAS9092 on “strengthening the capacity to respond to radiological emergencies of category II and III facilities in the Asia Pacific region” has been developed by RCARO under the IAEA TC Programme. It aims to transfer knowledge and technology in establishing adequate emergency preparedness and response procedures for category II and III facilities, using a graded approach. Funded by the Korean Government, the project is to be implemented for five years from 2020 to 2024, extending one more year, as decided at the project coordination meeting in 2020 due to the difficulties in undertaking the planned activities resulted from the COVID-19 pandemic.

Fifteen (15) GPs, ROK as the lead country, participate in the project: AUL, BGD, CAM, IND, INS, MAL, MON, MYA, NEP, PAK, PHI, SIN, THA and VIE.

In 2022, the Government of Norway has provided 350,000 euros to support the project in terms of procurement of items such as personal radiation detector and decontamination kits needed by the countries. Requests have been received by the countries and are being arranged by the IAEA.

#### **3.1.1 Implementation of regional training courses**

According to the work plan, a regional training course on development and use of operational intervention levels(OILs) for reactor emergencies will be held on 3-7 October 2022 in Thailand and the other on developing a protection strategy for a nuclear or radiological emergency will be held from 31 Oct. to 4 November 2022 in Viet Nam.

#### **3.1.2 Submission of progress report**

Project Progress Assessment Report (PPAR) will be submitted to the IAEA in due time, integrating national reports received from the NPCs of the project.

### **3.2 Implementation of the RCARO Managed Project: Research Project RCARP02**

The 2<sup>nd</sup> phase of the RCA Research Project on “Air Quality and Environmental Impact Assessment of Industrial Activities in the Region (RCARP02)” is being implemented as a component of the RCARO Managed Projects under the RCA Programme. The project is to

improve the quality of the environment through provision of appropriate pollutant data to researchers and relevant stakeholders and will be implemented for three years from 2021 to 2023. Eleven (11) GPs participate in the project: AUL, NZE, ROK as Agreement Holders and CPR, INS, MAL, MON, NEP, PAK, THA and VIE as Contract Holders

### **3.2.1 Conducting research coordination meeting(s)**

Research coordination meeting was held on 12-14 January 2022 virtually, inviting the CSIs, the technical officer, a member of the Research Review Committee (RRC) and relevant experts.

The meeting reviewed and discussed the research progress made by the participating countries in 2021 against performance indicators and refined the details of research activities and work plans for 2022-2023.

### **3.2.2. Review of progress reports**

CSIs will be requested to submit annual progress reports for review by the RRC in Q4 2022. Based on the RRC's review, RCARO will make necessary financial arrangements for continued research of the participating countries in due course.

## **3.3 Implementation of the RCARO Managed Project: Research Project RCARP03**

Following the decision of the 50<sup>th</sup> GCM on the theme proposed by Indonesia, RCARO has initiated a new RCA Research Project on "Closing the Gap in Access to Radiotherapy in RCA Government Parties (RCARP03)". With the aim of improving cancer planning and scaling up radiotherapy services through provision of evidence based information on the radiotherapy services, the project will be implemented for three years from 2022 to 2024.

Eight (8) GPs participate in the project: AUL, PHI, ROK as Agreement Holders and INS, MAL, MON, THA and VIE as Contract Holders.

### **3.3.1 Conducting a research coordination meeting**

Research coordination meeting was held on 17-18 March 2022 virtually, inviting the CSIs, the technical officer, a member of the Research Review Committee (RRC) and relevant experts.

The meeting discussed and agreed to the Protocol including the methodology prepared by the Technical Officer and key stakeholders of the project and requested the CSIs to revise the national work plans reflecting the methodology. The meeting also confirmed the regional work plan for

2022-2024.

### **3.3.2. Review of progress reports**

CSIs will be requested to submit annual progress reports for review by the RRC in Q4 2022. Based on the RRC's review, RCARO will make necessary financial arrangements for continued research of the participating countries in due course.

## **4. Assisting the Government Parties in human resource development**

### **4.1. Capacity building through the Korean Institutes/Universities**

#### **4.1.1. Supporting the Master's Degree Programmes**

With the aim of assisting the Government Parties in capacity building related to nuclear science and technology, RCARO has been implementing the Nuclear Engineering Master's Degree Course in cooperation with the Korea Advanced Institute of Science and Technology (KAIST). One student from Indonesia is newly admitted to the KAIST.

For the KINGS Master's Degree Course, RCARO supports four selectees from Bangladesh, Indonesia and the Philippines for their study in the KINGS. Taking the opportunity of being in Korea, they were given the opportunity to work/experience various Korean institutes including RCARO during the summer vacation as an internship. Two from Indonesia successfully completed their internship in RCARO for one month in August 2022. RCARO will further recruit students in October for the year 2023.

\*KINGS: KEPCO International Nuclear Graduate School

#### **4.1.2. Implementing capacity building activities on radiation technology**

RCARO has been implementing various regional training courses in cooperation with the Korean institutes in various fields of radiation technology. Combining those courses, RCARO hosted an integrated course covering the radiation application in thematic areas and radiation safety from 22 August to 2 September 2022 via E-Campus, engaging the Korean institutes. Scientific Visits will be awarded to participants with good grades for the purpose of visiting relevant facilities and on-site experiments for a duration of one week in Korea. A total of twenty selectees including those from 2020 to 2021 who could not be awarded due to the Covid-19 pandemic will be invited to Korea in December 2022.



Further in cooperation with the KAERI, a regional training course on radiation equipment and its applications was held virtually on 22-26 August 2022, attended by 31 participants from 7 Government Parties.

#### **4.2. Provision of online training through the RCA e-Learning Campus**

RCARO has been operating a platform for e-Learning on the RCA website and developing a number of e-Learning modules to provide learning opportunities to the RCA experts. With the significant increase of virtual activities and demand for expansion of the platform, the platform is being upgraded to improve the scope and functions of the platform. The upgraded RCA E-CAMPUS will not only continue providing free learning opportunities to the professionals in nuclear science and technology but also offer a systematic platform for conducting online courses for selected participants and virtual events such as real-time lectures and meetings/workshops. In terms of the contents, RCARO developed 26 e-Learning modules for training courses in 2022, making a total of 196 modules uploaded on the Campus.

#### **4.3. RCARO Fellowship Programme**

RCARO plans to continue the Programme in Q4 to invite fellows to RCARO. Giving priorities to the selectees in 2020 and subject to their availability, a selectee from Cambodia will be invited and join the office in November 2022.

### **5. Facilitating the better implementation of the RCA Programme**

#### **5.1 Supporting the IAEA for the RCA secretariat functions**

RCARO supported the IAEA in its RCA secretariat functions in terms of preparation and coordination of the policy meetings and coordination of WG activities.

RCARO assisted the IAEA in preparation for the 44<sup>th</sup> NRM, the 51<sup>st</sup> GCM and the Ministerial Level Meeting, in terms of preparation of agendas, background documents and the 2021 RCA annual report.

For the activities of the WG on the RCA MTS 2018-2023 Coordination, RCARO supported the WG by hosting virtual meetings and sharing its views on the issues raised at the meetings.

#### **5.2. Assisting the RCA Chair for coordination of activities**

Decided by the 46<sup>th</sup> GCM on the RCARO's support to the RCA Chair, RCARO provided

assistance to the RCA Chair in performing his/her duties as appropriate. A guide developed by the RCARO has been sent to assist the Chair in fulfilling the roles and responsibilities and performing relevant duties.

### **5.3. Providing support for celebration of the 50<sup>th</sup> anniversary of the RCA**

As approved by the 50<sup>th</sup> GCM, RCARO carried out various activities in celebration of the 50<sup>th</sup> anniversary of the RCA. The activities include the organization of a RCA exhibition during the 66<sup>th</sup> IAEA GC, production of a Video and development of a dedicated website for the anniversary. In addition, RCARO participated in the meetings of the STF and the RCA Awards Committee and shared views/opinions on the issues raised, as a member.

#### **5.3.1 Holding of a RCA exhibition**

With the purpose of showcasing the achievements of the RCA over the past 50 years and presenting the future directions, RCA will hold an exhibition during the 66<sup>th</sup> IAEA General Conference in September 2022 at the IAEA Headquarters. RCARO submitted a proposal for an exhibition space to the IAEA and a space of 12 m<sup>2</sup>(6m x 2m) in the hallway of the A building have been assigned for the RCA.

RCARO designed the booth and prepared banners in consultation with relevant experts and members of the STF. As one of the main features, the booth will showcase success stories and outputs of RCA projects in an electronic format, supported by the Government Parties and stakeholders of the RCA.

An opening will be held at 13:00 on 26 September 2022, prior to the Ministerial Level Meeting, attended by the RCA Chair, Ministers and representatives of the IAEA and RCA.

#### **5.3.2 Production of a Video**

RCA anniversary video has been produced, containing the overview and history of the RCA as well as its achievements. It's composed of motion graphics, interviews by RCA stakeholders and messages collected from the GPs. RCARO requested the GPs in December 2021 for photos and videos taken during the RCA activities that would enrich the contents of the video.

In addition, RCARO updated the RCA promotional video, including the key numbers of the RCA over the 50 years. The videos have been uploaded on the website and will be played at the RCA exhibition booth and the Ministerial Level Meeting.

### **5.3.3 Development of a website**

RCARO developed a dedicated website for providing overall information and messages related to the Anniversary. The website contains overview of the RCA and the main events including the RCA Ministerial Level Meeting and the exhibition. Congratulatory remarks by RCA stakeholders are also displayed on the website. With the aim to encourage all GPs participate in the preparation and celebration of the RCA and share ownership, RCARO invited the Government Parties to send recorded congratulatory messages. The website has been presented at the 44<sup>th</sup> NRM and will be operated throughout the year of the RCA 50<sup>th</sup> Anniversary.

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

The contribution will continue in 2022 to support RCA projects in need of financial support, subject to the budget availability of the RCARO.

### **5.5 International Symposium for celebrating the 20<sup>th</sup> anniversary of the RCARO**

RCARO celebrates its 20<sup>th</sup> anniversary in 2022. The 34<sup>th</sup> SAC recommended the RCARO consider demonstrating the achievements through special publications and an anniversary ceremony.

In commemoration of its 20<sup>th</sup> anniversary, RCARO is publishing a book “20 years of the RCARO” and plans to hold an international symposium on 14 December 2022 in Sejong, Korea, inviting stakeholders of the RCA and the IAEA.

Under the theme, “Cooperative Leadership in Nuclear Science & Technology and Sustainable Development in the Asia-Pacific Region”, the symposium will consist of an opening ceremony, two sessions and a panel discussion. It aims to flash back the contribution of the RCARO to the development of the RCA and look for strategic ways to reinforce the roles and responsibilities of the RCARO to support the RCA.

It is expected to provide the participants an opportunity to look on the accomplishments of the RCA achieved through close collaboration among the Government Parties, RCARO and IAEA and present visions of the RCARO to strengthen its commitment to the RCA.