

## **RCARO Director's Report on the Progress of the 2021 Work Plan**

**The 43<sup>rd</sup> NRM decisions relevant to the RCARO 2021 Work Plan**

**The Meeting took note of the report of the 32<sup>nd</sup> Meeting of the RCARO SAC delivered by the RCARO SAC Chair and endorsed its recommendations of**

- seeking possible ways to carry out follow-up partnership activities or projects**
- conducting a survey of the NRs to identify the regional needs on cooperative R&D for implementation of a new RP**
- expansion of modules to various application areas of nuclear science and technology**

# **RCARO 2021 Work Plan**

## **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**

RCARO has been providing RCA information service through the RCA website for RCA GPs and end-users. In response to the growing needs for enhancement of the website to provide comprehensive information on the RCA Programme and expansion of online activities of the RCA, RCARO plans to improve the RCA website to provide integrated information service to the GPs and facilitate efficient and effective implementation of the RCA Programme.

RCARO initiated a plan to reform the RCA website in consultation with an IT company. While continuing its role of providing and archiving overall information on the RCA, policy meetings and RCA projects as well as information on regional resources, RCARO will set up platforms that can provide expanded information and more comprehensive on-line services to the RCA GPs. In addition, RCARO will upgrade the RCA e-Learning Campus to provide not only e-learning but also to assist RCA GPs in conducting other online activities such as virtual meetings and training activities. Further, RCARO will set up a dedicated platform called 'RCARO project e-management' for managing activities of RCARO, where RCA GPs can easily access to information and participate in various activities managed and initiated by RCARO.

The improvement of the RCA website and development of the platforms will be carried out through the second half of 2021 with a target to launch the integrated system by the first half of 2022.

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

RCARO has been uploading details of RCA projects, including information of the LCCs, NPCs as well as information of the RRUs, on the Project Information platform established on the RCA website. As recommended at the 41st NRM to upload project documents on the website, RCARO requested the LCCs of on-going projects and projects completed in recent years for the materials produced under each project and uploaded the collected documents on the platform.

With regard to preparation for the RCA Project Cycle 2024-2025, RCARO posted necessary materials and resource documents that would support the GPs in developing the pre-concepts.

## **1.2. Publication of Newsletters**

With a view to moving with the global trend of digitalization, RCARO plans to publish e-newsletters as a way of promotion of the RCA.

A detailed plan has been prepared, which includes the structure of the newsletter and procedure for its publication. The contents will include news and information of the RCA and its activities, and editorials on the status and development of nuclear science and technology in the region. GPs and other relevant experts will be encouraged to participate in the publication of the newsletter by providing necessary information or articles to enrich the contents as well as utilize the newsletter as a vehicle to discuss and share views on RCA related issues.

For publication of the newsletter, a committee will be established, comprising of the members of the RCARO SAC as Publication Advisors, 2-3 RCA experts as Editorial Advisors and RCARO. While RCARO takes responsibility of managing all aspects of publishing the newsletter, other members of the committee will be requested to provide their expertise and insights for maintaining reliability and quality of the RCA Newsletter. Terms of Reference of the committee is prepared specifying the roles and membership.

It will be published and distributed via email to the target readers on a periodical basis, starting from March 2022 in celebration of the 50<sup>th</sup> Anniversary of the RCA and the 20<sup>th</sup> Anniversary of the establishment of the RCARO.

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

### **1.3.1. Exhibition on RCA activities to target audiences**

According to the change of the event due to the COVID-19 pandemic, RCARO participated in the 15<sup>th</sup> International Congress of the International Radiation Protection Association (IRPA15) on 18 January - 5 February 2021 held virtually for three weeks. RCARO held an online exhibition and displayed RCA videos and electronic versions of promotional materials such as brochures and success stories.

### **1.3.2. Supporting the RCA expert for promotion of the RCA and its projects**

The 20th World Conference on Non-Destructive Testing (WCNDT), in which a selectee of 2020 from MAL was supposed to participate, was postponed to May 30-June 3 2022.

RCARO will keep monitor the situation and make necessary arrangements for his participation

in the event in due course, subject to change resulted from the COVID-19 pandemic.

Due to the uncertainty of the regional/international events in 2022 in which the RCA experts could participate, the programme may be substituted by other promotional activity to promote the RCA and its achievements to the relevant target audiences.

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

### **2.1 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 is being implemented from 2013 to 2021 (phase 1: 2013-2015, phase 2: 2017-2021), with the aim of promoting and disseminating the use of EB technology in the areas of agriculture, industry and environmental treatment.

Fifteen (15) 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.

#### **2.1.1 Development of e-Learning modules**

Towards contributing to the continued education of the participating countries after completion of the project, e-Learning modules on the EB applications have been developed in cooperation with Korea Atomic Energy Research Institute (KAERI). The modules include lectures on the essential knowledge ranging from the EB accelerator to its applications according to the thematic areas. An online training course was held for two weeks from 30 August to 10 September 2021, attended by 23 participants from 8 countries. The course was comprised of those e-Learning modules, real time lectures, tests and assignments.

#### **2.1.2 Holding a final review meeting**

A final review meeting was conducted online on 8-9 June 2021 in conjunction with a technical workshop on E-beam principles and applications: introducing A to Z, attended by 54 participants from 13 countries. To celebrate the successful completion of the project, an online exhibition was held, showcasing the project achievements.

It was noted that the project has been successfully completed according to the set objectives and work plan and recommended RCARO to consider planning a follow-up project/activity in the field, noting that there are still strong needs for further development of the technology and its

applications, especially in terms of human resource and facility development.

### **2.1.3 Publication of a final report and submission of progress/financial reports**

A final report has been published, consolidating the outputs and outcomes of the project at national and regional level and shared with the participating countries and the UNOSSC.

Upon the rules and regulations of the UNOSSC, progress and financial reports have been submitted in due course.

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

RCARO has been implementing a project with the ASEANTOM (ASEAN Network of Regulatory Bodies on Atomic Energy), on “enhancing emergency preparedness and response capabilities through building technical capacity in radiation monitoring and dose assessment following the nuclear and radiological emergencies (2020-2021).”

\*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 coordination/review meeting(s)**

A project coordination meeting was held online on 2 March 2021 for preparatory discussion and on 4 March for the formal meeting. The meeting identified the national/regional status of the subject area and confirmed the details of work plan for 2021.

It was decided that the development of a guideline, a webinar, an online training course and a review meeting with technical workshop be conducted in 2021.

### **2.2.2 Development of a guideline**

According to the work plan, a guideline on radioactivity measurement and radiation dose assessment in the environment and the public containing recommended techniques for sample collection & preparation, measurement of radionuclides, and radiation dose assessment has been developed, supported by experts from Australia, Japan and Korea.

As its first step, to make it fit and useful for the ASEAN countries, a survey was conducted to identify the status of the countries, such as details of equipment, system and personnel. An expert meeting was followed in March where the scope and contents were decided.

After review by area experts and reflecting comments from the ASEAN countries, the guideline has been finalized.

A webinar on introduction of the guideline was held on 31 August 2021, attended by 58

participants including the NPCs, relevant experts of the project and developers of the guideline. During the webinar, an overview of the guideline document with brief introduction of each chapter was provided by the developers.

### **2.2.3 Conducting an online course**

An online training course will be conducted in November 2021, inviting relevant stakeholders of ASEAN countries to provide technical lectures on advanced knowledge on radiation monitoring and dose assessment. While additional modules on dosimetry will be developed by area experts, the e-Learning modules developed in 2020 will also be used as a part of the course. The course will be consisted of an online self-paced segment followed by a hands-on, interactive component with dedicated trainers.

## **2.3 Supporting the RCA/ARCCNM workshop**

Since 2008, RCARO has been implementing the RCA/ARCCNM workshop to support nuclear medicine physicians and scientists in the developing and less developed RCA countries and further promote the application of the nuclear medicine technology in those countries. An online workshop will be held on 1-3 November 2021.

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

On behalf of the RCA, RCARO has been participating in the FNCA Coordinators Meeting held in Japan to present the achievements of the RCA and promote cooperation between the RCA and the FNCA. A virtual meeting was held on 30 June in a small scale. RCA was not invited to the meeting.

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

#### **3.1.1 Conducting a webinar**

According to the work plan decided at the project coordination meeting in 2020, a webinar was held on 7 Sept. 2021 in order to provide introductory learning on EPR and IAEA safety standards and to provide information on how national standards are developed, utilized in the field. Target audience for this webinar is experts from national regulatory bodies and operating organizations who are involved in establishing EPR plans.

#### **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**

RCARO has been implementing the RCA Research Project on “Air Quality and Environmental Impact Assessment of Industrial Activities in the Region” under the framework of the RCARO Managed Project.

The 1<sup>st</sup> phase of the project (RCARP01) was implemented in 2018-2020. Approved by the 48<sup>th</sup> GCM, the 2<sup>nd</sup> phase of the project (RCARP02) on the expanded research on other pollutant sources such as crops, water and soil will be implemented for another three years from 2021 to 2023.

Twelve (12) GPs participate in the 2<sup>nd</sup> phase of the project: AUL, NZE, ROK as Agreement Holders and CPR, INS, MAL, MON, MYA, NEP, PAK, THA and VIE as Contract Holders.

#### **3.2.1 Conducting a research coordination meeting**

Research coordination meeting was held virtually on 18-19 March 2021, inviting the CSIs from 12 participating countries, a member of the Research Review Committee (RRC) and the technical officer.

The meeting reviewed the project achievements and lessons learned from the phase 1 and discussed and finalized the major project components of the phase 2 such as objectives, expected outputs/outcomes and performance indicators and the work plan.

### **3.2.2. Development of a new Research Project**

RCARO plans to initiate a new Research Project on a topic that could contribute to addressing regional problems through research in nuclear science and technology.

As approved by the 43<sup>rd</sup> NRM, RCARO conducted a survey of the NRs in July to identify priority areas of research. The GPs were asked to prioritize the possible areas for research, listed from the RCA MTS 2018-2023 and Regional Programme Framework(RPF) 2024-2029, taking into account that further research in the field would contribute to addressing the regional problems. 15 out of 22 GPs responded to the survey and the result of the survey showed that ‘radiation oncology’ is the highest priority for a new RP, chosen by 7 GPs as the 1<sup>st</sup> priority area.

Based on the survey result, RCARO has invited the GPs to submit Research Project Theme(RPT) proposals on the identified area in consultation with relevant national research institutes.

A total of 9 theme proposals from 8 countries have been received and submitted to the area experts, recommended by the IAEA for technical assessment and the PAC which takes the role as the Research Review Committee(RRC) for evaluation of compliance with the RCA MTS and other RCA requirements.

The result of the evaluation will be submitted to the SAC for review and recommendation and further presented to the NRs for consideration.

Upon the decision of the NRs, GPs will be invited to submit research proposals on the selected theme to RCARO for review by the RRC. Based on the RRC’s evaluation, participating GPs will be decided and RCARO will confirm the start date, subject to the budget availability.

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

### **4.1. Provision of online education/training through the RCA e-Learning Campus**

With the increased demand and emphasis on digitalization of learning contents for efficient training and its impact, RCARO has developed the online training platform for the RCA, the “RCA e-Learning Campus” on the RCA website ([www.rcaro.org/elearning](http://www.rcaro.org/elearning)). It is designed to provide sustainable learning opportunities and contribute enhancement of the capacity in nuclear science and technology for the RCA GPs to meet the growing needs for continued education and preservation of skills related to the technology.

#### **4.1.1. Enhancement of the RCA e-Learning Campus**

Currently, the RCA e-Learning Campus provides online training on essential knowledge in nuclear medicine and radiation safety for experts and stakeholders interested in the related fields.

Responding to the recommendation of the 32<sup>nd</sup> RCARO SAC on expansion of modules to various application areas of nuclear science and technology, RCARO is in the process of upgrading the



platform to accommodate more learning contents and improve its functions.

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

### **4.2.1. Supporting the RCARO/KAIST Nuclear Engineering Master's Degree Programme**

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). Due to the Covid-19 pandemic, the course is being implemented using online communication tools for the selectees from the Philippines and Indonesia.

### **4.2.2. 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 will host an integrated course covering the radiation application in thematic areas and radiation safety, engaging the Korean institutes. Further in cooperation with the KAERI, a capacity building activity on an area of focus of the GPs is planned. Due to the Covid-19 pandemic, activities will be carried out virtually in the fourth quarter of 2021.

## **4.3. IAEA/RCARO training course**

In order to raise the efficiency and effectiveness of the training opportunities, RCARO has been implementing joint training courses in cooperation with the IAEA.

Relevant activity will be considered in connection to the RCARO/ASEANTOM project on radiation monitoring and dose assessment.

## **4.4. RCARO Fellowship Programme**

Due to the prolonged Covid-19 pandemic, the selectees could not be invited to RCARO. Subject to the progress of the situation, RCARO will make necessary arrangements for their participation in due course.

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

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

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 43<sup>rd</sup> NRM and the 50<sup>th</sup> GCM, including preparation of agenda, background documents and 2020 RCA annual report.

For the activities of the WG on the RCA MTS 2018-2023 Coordination and the WG for drafting the MTS 2024-2029, RCARO supported the WGs 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 provides assistance to the Chair in performing his/her duties as appropriate.

In this relation, RCARO has developed a Guide for the RCA Chair to refer to at times of the RCA events or any other policy matters as the role of the Chair is crucial for effective and efficient management of the RCA Programme.

This guide aims to assist the Chair in fulfilling his/her roles and responsibilities and performing relevant duties and will be continuously updated following decisions made during the NRM/GCM, or upon request from the RCA Chair and IAEA.

## **5.3. Participation in the activities of the Special Task Force (STF)**

Virtual meetings were held in February and August 2021. Requested by the Chair, RCARO presented a detailed plan on the exhibition and other activities in view of the 50<sup>th</sup> anniversary of the RCA.

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

The contribution will continue in 2021 to support RCA projects in need of financial support, subject to the budget availability of the RCARO.