

Public Version



REGIONAL COOPERATIVE AGREEMENT

ANNUAL REPORT 2020

Table of Contents

SECTION 1 - OVERVIEW OF THE RCA PROGRAMME IN 2020	4
1. Summary of the RCA Programme in 2020.....	4
2. Management and Implementation of the RCA Programme in 2020	4
2.1 Summary of Financial and In-Kind Contributions	4
2.2 Regional Events	5
2.3 Progress Monitoring and Reporting	5
2.4 Challenges in Implementation	5
3. Summary of the RCA Regional Office (RCARO) Activities Related to Promotional and other Non-technical Activities in 2020.....	6
SECTION 2 - DETAILS OF THE TECHNICAL PROGRAMME IN 2020	7
➤ RCA Programme Management	
1. Enhancing the Management and Implementation of Activities under the Framework	
➤ Industry	
2. Strengthening Regional Capacity in NDT and Examination Using Nuclear and Related Techniques for Safer, Reliable, More Efficient and Sustainable Industries Including Civil Engineering	
➤ Agriculture	
3. Promoting the Application of Mutation Techniques and Related Biotechnologies for the Development of Green Crop Varieties	
4. Enhancing Food Safety and Supporting Regional Authentication of Foodstuffs through Implementation of Nuclear Techniques	
5. Assessing and Improving Soil and Water Quality to Minimize Land Degradation and Enhance Crop Productivity Using Nuclear Techniques	
6. Promoting Food Irradiation by Electron Beam and X Ray Technology to Enhance Food Safety, Security and Trade	
➤ Human Health	
7. Strengthening Cancer Management Programmes in GPs through Collaboration with National and Regional Radiation Oncology Societies	
8. Enhancing Medical Physics to Develop GPs through Regional Leadership in Standards and Education and Training Support	
9. Strengthening Capacity to Manage NCDs Using Imaging Modalities in Radiology and Nuclear Medicine	
10. Empowering Regional Collaboration among Radiotherapy Professionals through Online Clinical Networks	
11. Enhancing Capacity and Capability for the production of Cyclotron-Based Radiopharmaceuticals	
➤ Environment	
12. Enhancing Regional Capabilities for Marine Radioactivity Monitoring and Assessment of the Potential Impact of Radioactive Releases from Nuclear Facilities in Asia-Pacific Marine Ecosystems	

13. Assessing the Vulnerability of Coastal Landscapes and Ecosystems to Sea-Level Rise and Climate Change
14. Enhancing Regional Capability for the Effective Management of Ground Water Resources Using Isotopic Techniques
15. Enhancing Wetland Management and Sustainable Conservation Planning

➤ **Radiation Safety**

16. Strengthening the Capacity to Respond to Radiological emergencies of Category II and III Facilities

Annex 1: List of RCA On-going Projects in 2020

Annex 2: Planned Regional Events under RCA Projects in 2021

Annex 3: List of National RCA Representatives

Annex 4: RCARO Activities Related to Promotional and Other Non-technical Activities in 2020

SECTION 1 - OVERVIEW OF THE RCA PROGRAMME IN 2020

1. Summary of the RCA Programme in 2020

There were sixteen (16) active projects in 2020; five (5) projects in the field of human health, four (4) projects in food and agriculture, two (2) projects in the field of environmental protection, one (1) project on groundwater resources, one (1) project on wetland management, one (1) project in the industrial application, one (1) project on radiation protection and one (1) project in support of the RCA management. The highlights of all active projects are given in Section 2. Detailed information on them is available on the IAEA web-based platform Programme Cycle Management Framework (PCMF).

List of RCA projects in 2020 is shown in Annex 1.

More than 40 RCA events, including meetings/workshops and regional training courses, were initially planned for 2020 according to the work plans of each project. However, the outbreak of the COVID-19 pandemic greatly affected the implementation of the RCA Programme, resulting in postponement or cancellation of most of the activities. In response, the Lead Country Coordinators (LCCs) and Technical Officers (TOs) of respective projects and the RCA Focal Person (RCA-FP) reviewed the work plans and adjusted the regional events so that they could be conducted virtually.

Consequently, twenty-two (22) regional meetings were held, including three (3) face-to-face meetings conducted before the outbreak of the COVID-19 pandemic. These included project kick-off and progress review meetings, project design meetings, expert meetings and workshops. A total of four-hundred-seventy-four (474) participants, including ninety-three (93) experts, participated in these meetings. In addition to the project-related and expert meetings, two (2) policy level meetings of the National RCA Representatives, namely the 42nd Meeting of National RCA Representatives and the 49th RCA General Conference Meeting, were held virtually, involving fifty-nine (59) and eighty (80) participants respectively. As for regional training courses, one (1) regional training course was held virtually, which was attended by sixteen (16) participants including two (2) experts.

Similarly, only two (2) expert missions could be conducted physically in February before the travel restriction was imposed globally. The total duration of the missions was seven (7) days, and of the four (4) experts recruited, two (2) were from the RCA GPs. To compensate for the postponement and cancellation of the other expert missions and regional training courses, many of the events were substituted with a total of twenty-eight (28) home-based assignments for development of training materials and project-related documents, preparation of project meetings, etc. The total duration was seven-hundred-sixty-eight (768) days, and of the thirty-eight (38) experts recruited, twenty-six (26) were from the RCA GPs.

2. Management and Implementation of the RCA Programme in 2020

2.1 Summary of Financial and In-Kind Contributions

The budget allotment from the TC Fund for 2020 was €1,827,487.41. The encumbrances and actuals in 2020 were €1,763,131.79 at an Implementation Rate of about 96.48%.

Government Parties (GPs) continued supporting the RCA programme through extrabudgetary contributions and in-kind contributions. In 2020, a total of €203,830 in extrabudgetary contributions were received from China, Republic of Korea, Malaysia, Philippines, and the United States of America.

“In-kind” contributions have been recognised since the RCA Agreement commenced in 1972. In line with TC practice, “In-kind” contributions are understood as cost-free goods and/or services provided by a Party (Donor) for the benefit of one or other Parties (Recipients) in the implementation of a specific project. The RCA GPs have agreed that for reporting purposes, the

financial contribution of each RCA GP to the RCA programme be calculated based on an adopted and non-discriminatory measure of the “In-kind” contribution and presented in the RCA Annual Reports. The total amount of “In-kind” contributions made by the RCA GPs was calculated as €263,951 in 2020.

2.2 Regional Events

More than 40 regional events, including meetings/workshops and regional training courses were originally planned for 2020. However, most of them had to be adjusted due to the unexpected outbreak of the COVID-19 pandemic and associated travel restrictions. As recommended at the 42nd NRM, the LCCs, TOs and the RCA-FP reviewed the activities and identified which could be implemented via online tools as an effort to carry out the work plans and fulfil the objectives of each project as much as possible.

As a result, the meetings, namely project coordination and review meetings, were conducted virtually to set up or update work plans and review the progress of the RCA projects. On the other hand, the events that required physical activities, such as workshops and onsite trainings, were postponed or decided to be substituted with other activities, for instance, the development of training materials.

Indicative plan for RCA regional events in 2021 is given in Annex 2.

2.3 Progress Monitoring and Reporting

Progress monitoring and reporting of the projects was undertaken through the annual progress reports by NPCs and the consolidated Project Progress Assessment Reports (PPARs) were timely submitted by LCCs via the IAEA platform <https://tcreports.iaea.org>. To continue this good practice, NRs are requested to ensure that NPCs submit national reports to LCCs in time so that LCCs have sufficient inputs and time to consolidate and submit PPARs to the IAEA.

The progress of the projects was reviewed at the 42nd Meeting of the National RCA Representatives and the 49th RCA General Conference Meeting, mainly by written reports due to the time limit of virtual meetings.

2.4 Challenges in Implementation

It is undeniable that the outbreak of the COVID-19 pandemic and consequential travel restrictions greatly affected the implementation of the RCA Programme in 2020 as the majority of planned events that involved physical activities had to be cancelled or postponed. As a means to cope with this difficulty, the RCA rapidly adopted IT tools and conducted virtual events based on the close cooperation of the NRs and other relevant stakeholders.

Conversely, some problems occurred during preparation and implementation of activities owing to technical issues. In addition, the necessity to digitalize RCA activities and documents was emphasised heavily, in line with the global trend. In this view, it was requested to project stakeholders to firstly identify the activities that could be conducted online or contribute to remote trainings, which resulted in a saving of €1.2 million for 2020. With a view to achieving the project objectives as much as possible, the NRs agreed to use the unspent funds for procuring necessary equipment, spare parts, etc. as well as for recruiting experts to develop training materials. Further, NRs were encouraged to ensure that the relevant institutes and experts are equipped with adequate infrastructure and skills for conducting online events.

3. Summary of the RCA Regional Office (RCARO) Activities Related to Promotional and Other Non-technical Activities in 2020

Despite the unexpected outbreak of the COVID-19 pandemic, RCARO tried its utmost to fulfil the mandates of increasing the RCA awareness and establishing collaborations with other international/regional organisations by adjusting its activities and work plan.

RCARO published two RCA Success Stories in the fields of Human Health and Environment, in consultation with relevant LCCs, TOs and other stakeholders and also participated in the 10th International Conference on Isotopes in February 2020 in Malaysia to promote the RCA to the target audiences. RCARO updated the RCA website with necessary details and materials of the on-going and new RCA projects to support information exchange of the experts.

Under the RCA/UNOSSC project on electron beam applications, an online Group Fellowship Programme was implemented from 31 August to 7 November 2020. Three (3) fellows from THA, INS and VIE participated and were provided with e-Learning and real-time lectures developed by experts from the Korea Atomic Energy Research Institute (KAERI).

The project was approved to be extended for six months until June 2021 considering the activities that could not be conducted due to the COVID-19 pandemic. Towards the completion of the project, RCARO produced a promotional video showcasing the regional/national achievements of the project.

The RCARO/ASEANTOM partnership project on radiation safety was initiated, which involved ten (10) RCA/ASEAN countries. As the project coordination meeting was postponed to 2021, a survey was conducted to identify their national status. The physical training course was also replaced by the development of eleven (11) e-Learning modules on radiation monitoring and dose assessment with the support of relevant experts from THA, ROK and JPN.

Initiated in 2018, the first phase of the RCARO Managed Project on air pollution, the RCA Research Project, successfully ended in 2020. The participating GPs submitted annual reports for the Research Review Committee (RRC)'s review and an achievement report was drafted by the TO, integrating the three-year progress of the project.

As approved at the 48th GCM, the GPs were invited to submit research proposals for participation in the 2nd phase, to be implemented in 2021-2023, and twelve (12) GPs were decided to participate in it based on the RRU's review.

As a follow up of RAS6083 to support the GPs with continued education on nuclear medicine, an Expert Meeting was held on 2-4 February 2020 in Manila, Philippines. The Meeting reviewed the thirty (30) e-Learning modules developed in 2019 and discussed the work plan for 2020. From the work plan, twenty (20) more modules were developed in 2020, including a case-based module on practical applications of the technology, and all modules were uploaded onto the RCA e-Learning Campus, which was successfully launched on the RCA website in June 2020.

It was recommended at the 41st RCA NRM that a workshop be held to support the understanding of the new NRs on the RCA. In response, RCARO held an introductory workshop on the RCA Programme and its policy, involving the NRs and relevant stakeholders from 11 GPs. The overviews of the IAEA Technical Cooperation (TC) Programme, the RCA Programme and its policies, as well as the duties of the NRs were covered during the workshop.

The IAEA and RCARO signed the extension of the Practical Arrangements on cooperation in the performance of secretariat duties under the 2017 RCA for another 3 years until September 2023.

The RCARO activities related to promotional and other non-technical activities in 2020 are given in Annex 4.

SECTION 2 - DETAILS OF THE TECHNICAL PROGRAMME IN 2020

➤ RCA Programme Management

RAS0086	Enhancing the Management and Implementation of Activities under the Framework
Objective	To enhance the overall continuing development, improvement and sustainability of the RCA and its programme to support the RCA MTS 2018-2023 and the related UN Sustainable Development Goals (SDGs)

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	7 th Meeting of the MTSC WG	To update the work plan for 2020, review the WG ToR and prepare a status report for the 42 nd NRM	17-21 Feb.	Austria
Meeting	RCA PAC Meeting	To evaluate the second-round project concepts	24-28 Feb.	Austria
Meeting	42 nd Regional Meeting of the National RCA Representatives	To review and decide on the RCA Programme and other RCA related issues	23 Apr.	Virtual
Meeting	Special Task Force for the 50 th Anniversary of the RCA	To review and update the preparation of the 50 th Anniversary of the RCA	13 Aug.	Virtual
Meeting	RCA Chairs Meeting and RCARO SAC Meeting	To prepare for the 49 th RCA General Conference Meeting	17 Sep.	Virtual
Meeting	49 th RCA General Conference Meeting	To review and decide on the RCA Programme and other RCA related issues	18 Sep.	Virtual
Meeting	1 st Meeting of the Drafting MTS 2024-2029 WG	To discuss the roles and responsibilities of the WG and the work plan	10 Nov.	Virtual
Meeting	PAC Meeting for RCA Project Designs for 2022-2023	To enhance project designs for the selected concepts	24 Nov.	Virtual
Meeting	Project Design Meeting of RAS202010	To review the project design of RAS202010	8 Dec.	Virtual

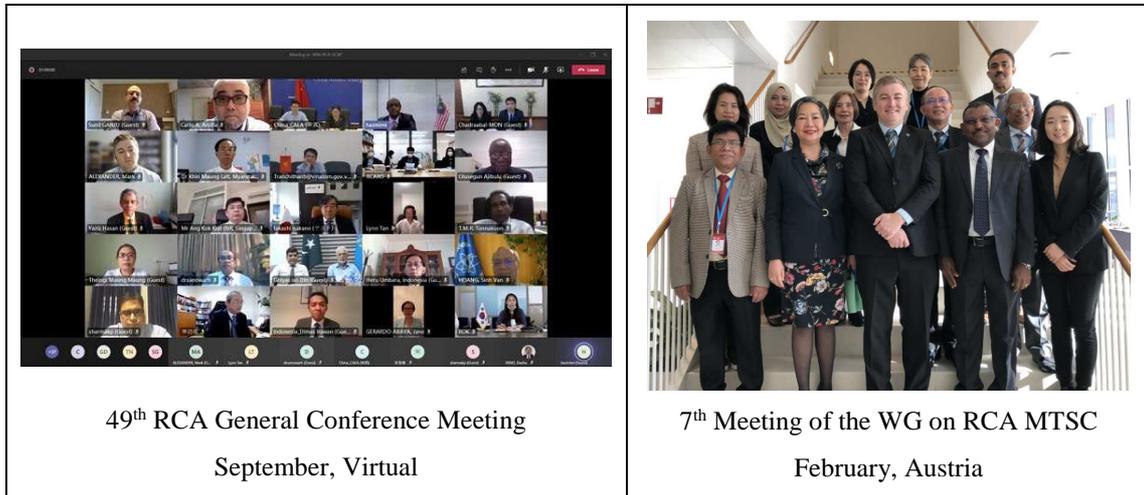
Expert	Home-Based Assignment	On developing an online data collection tool for social and economic impact assessment in the field of mutation breeding under the RCA projects	33 days	Spain
Expert	Home-Based Assignment	To conduct economic and social impact assessment of the RCA Programme: Mutation breeding case study	14 days	New Zealand
Expert	Home-Based Assignment	On conducting economic and social impact assessment of the RCA Programme: Mutation breeding case study	17 days	New Zealand
Expert	Home-Based Assignment	On conducting economic and social impact assessment of the RCA Programme: Mutation breeding case study	15 days	New Zealand
Expert	Home-Based Assignment	On conducting economic and social impact assessment of the RCA Programme: Mutation breeding case study	33 days	Spain
Expert	Home-Based Assignment	To review second-round RCA project concepts	10 days	Austria
Expert	Home-Based Assignment	On economic analysis for mutation breeding case study	28 days	New Zealand
Expert	Home-Based Assignment	On economic analysis for mutation breeding case study	23 days	New Zealand
Expert	Home-Based Assignment	On economic analysis for mutation breeding case study	30 days	New Zealand
Expert	Home-Based Assignment	On economic analysis for mutation breeding case study	12 days	Spain
Expert	Home-Based Assignment	On developing an online data collection tool for social and economic impact assessment in the field of mutation breeding under the RCA projects	32 days	Spain
Expert	Home-Based Assignment	On developing an online data collection tool for social and economic impact assessment in the field of mutation breeding under the RCA projects	13 days	New Zealand

Project highlights for 2020

The project supported the arrangement of meetings related to the RCA Programme and its policies, contributing to the effective management of the Programme. Unlike previous years, however, most meetings were held virtually due to the outbreak of the COVID-19 pandemic. Two RCA policy meetings and the 7th Meeting of the Working Group on the RCA Medium-Term Strategy (MTS) were held to decide strategic and policy issues and discuss the impact of the COVID-19 pandemic on the RCA Programme. Meetings of the RCA Programme Advisory Committee were held in preparation

of the RCA Programme for 2022-2023 and to conduct the mid-term review of the RCA MTS 2018-2023. The Working Group on Drafting RCA MTS 2024-2029 and the Special Task Force for the 50th Anniversary of the RCA were established and the first meetings were held to commence their activities.

The project also supported execution of the social and economic impact assessment of mutation breeding in crops of the RCA Programme, followed by the other two case studies: non-destructive testing (NDT) and radiotherapy technologies.



➤ **Industry**

RAS1022	Strengthening Regional Capacity in NDT and Examination Using Nuclear and Related Techniques for Safer, Reliable, More Efficient and Sustainable Industries Including Civil Engineering
Objective	To improve regional in the application of NDT/E to support the requirements of industries, including civil engineering for sustainable industrial development

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Expert	Home-Based Assignment	To draft training material on phased array ultrasonic testing	20 days	Australia

Project highlights for 2020

The meetings and training courses originally planned for 2020 could not be implemented due to the COVID-19 pandemic, however, GPs continued to carry out activities at the national level. Malaysia organized the first national Radiographic Testing – Digital (RT-D) training course in October 2020 which offered ISO 9712 RT-D certification by Malaysia’s National Certification Body. The

Philippines conducted a workshop on advanced NDT equipment in cooperation with the local NDT Society and equipment suppliers to provide awareness and updated technology advancement information to the local companies. In addition, the Republic of Korea organized a workshop on digital radiography and computed tomography. Singapore, having achieved the ISO 17024 certification by the Singapore Accreditation Council, conducted a series of promotional activities of their NDT Certification Body to the local industries.



National Training Course on RT-D
October, Malaysia

➤ **Agriculture**

RAS5077	Promoting the Application of Mutation Techniques and Related Biotechnologies for the Development of Green Crop Varieties
Objective	To increase environmentally friendly crop productivity through the application of mutation techniques and related biotechnology

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, and agree on measures to ensure achievement of project objectives	8-9 Oct.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	China

Project highlights for 2020

The project review meeting was held virtually on 8-9 October 2020 due to the COVID-19 pandemic, involving participants from 17 GPs and the IAEA. The Meeting accessed the progress of the project and significant achievements obtained in the GPs. A new mutagenesis approach such as heavy ion beams and proton irradiation was adopted for mutation induction in 8 GPs and some mutant varieties or lines were developed. In addition, more than 160 advanced promising mutant lines in diversity crops have been developed, 12 of which mutant lines including rice, wheat and soybean with improved green traits were released and disseminated to farmers to contribute to enhancement of food security. Relevant professionals were trained through national training courses and functions of the Asia and Oceania Association of Plant Mutagenesis (AOAPM) and Mutation Breeding Network (MBN).

RAS5081	Enhancing Food Safety and Supporting Regional Authentication of Foodstuffs through Implementation of Nuclear Techniques
Objective	To improve food safety, enhance consumer confidence and increase trade by establishing a robust and independent means of verification of origin of foodstuffs

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Expert	Expert Mission	To provide guidance on raising food fraud awareness	26-28 Feb.	Myanmar
Training Course	Regional Training Course	To train experts in data analysis for food authentication using the Chemometric Add-ins for Excel (CAFE) software	14-18 Dec.	Virtual
Expert	Home-Based Assignment	To develop remote-access training materials for the Chemometrics Add-in for Excel	30 days	Russia
Expert	Home-Based Assignment	To develop remote-access training materials for the Chemometrics Add-in for Excel	30 days	Russia
Expert	Home-Based Assignment	To develop 'on-demand' remote-access training materials for fundamentals in stable isotope systematics and analysis	30 days	United Kingdom
Expert	Home-Based Assignment	To develop member-state-specific web pages in the global food authenticity network website	30 days	Russia

Project highlights for 2020

An expert mission was implemented on 26-29 February 2020 in Myanmar to provide guidance on raising food fraud awareness. However, due to the outbreak of the COVID-19 pandemic, most of the

work plan for 2020 was revised in a way that could contribute to achieving the project objectives at the utmost. Experts were recruited to develop remote-access materials for training on the Chemometrics Add-in for the Excel programme and training for fundamentals in stable isotope systematics and analysis. In addition, web pages that were designed specifically for the GPs were developed in the global food authenticity network website.

RAS5084	Assessing and Improving Soil and Water Quality to Minimize Land Degradation and Enhance Crop Productivity Using Nuclear Techniques
Objective	To enhance the capacity of countries in the Asia-Pacific region to use nuclear techniques to assess and improve soil and water quality, and to implement best agricultural practices to minimize land degradation and enhance crop productivity

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, agree on measures to ensure achievement of project objectives	28-29 Oct.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the Project Update and Coordination Meeting	20 days	Australia

Project highlights for 2020

The project review meeting was held virtually on 23-29 October 2020 due to the COVID-19 pandemic, involving 18 NPCs, the LCC, PMO and TO from the IAEA. The Meeting discussed the progress to date at national and regional levels, the impacts of COVID-19 and refined the national/regional work plans for 2021.

Despite the pandemic-related restrictions, the GPs continued their national efforts to apply the techniques learnt from previous RTCs and expert missions to their national projects. Following the mid-term project coordination meeting in 2019, the GPs were invited to contribute their data to the ERAN Database in Environmental Radioactivity and Environmental Dynamics, managed by the Centre for Research in Isotopes and Environmental Dynamics (CRiED) at the University of Tsukuba, which became a great advantage to the project. In India, a soil organic carbon detection kit for field analysis of soil fertility was developed by Bhabha Atomic Research Centre (BARC), which was distributed to and used by around 25 groups, including farmers engaged in organic farming, soil testing labs and government agencies engaged in soil health management work. Future efforts will look at integrating this soil carbon testing kit with relevant activities.



RAS5087	Promoting Food Irradiation by Electron Beam and X Ray Technology to Enhance Food Safety, Security and Trade
Objective	To enhance food safety and trade in the regional through developing and promoting electron beam and X ray technologies for food irradiation

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	3-4 Sep.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	New Zealand
Expert	Home-Based Assignment	To prepare two documents on comparison of gamma, electron beam and X-ray sources for use in the irradiation of food, and harmonization of regional regulations for the permitted maximum energy of X-rays for food irradiation	20 days	New Zealand
Expert	Home-Based Assignment	To prepare two documents on comparison of gamma, electron beam and X-ray sources for use in the irradiation of food, and harmonization of regional regulations for the permitted maximum energy of X-rays for food irradiation	20 days	France

Project highlights for 2020

This project commenced in 2020 to address the over-reliance of food irradiation on one source of ionizing radiation - cobalt-60 - and promote future irradiation technologies. The first project

coordination was held virtually on 3-4 September 2020 due to the COVID-19 pandemic, involving experts from 18 GPs and the IAEA. The Meeting shared and revised the regional situation of food irradiation technology and application, and the participating GPs also presented their work plans that were modified considering the impacts of the pandemic, aiming to contribute to the project outputs and outcomes as originally planned.

In addition, two draft documents, one on comparative analysis of various irradiation modalities and the other on harmonization of regulation on the maximum energy of X-ray used for food irradiation, were prepared in 2020. These documents are expected to provide useful information to the food regulators, industry and relevant stakeholders after their completion.

➤ **Human Health**

RAS6086	Strengthening Cancer Management Programmes in GPs through Collaboration with National and Regional Radiation Oncology Societies
Objective	To improve the cancer management of RCA States Parties by training radiation oncology professionals in collaboration with RCA and Asia Pacific national/regional radiation oncology societies

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, agree on measures to ensure achievement of project objectives	25-26 Nov.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the coordination meeting	20 days	Japan

Project highlights for 2020

The project review meeting was held virtually on 25-26 November 2020 due to the COVID-19 pandemic, involving 28 participants from 19 participating GPs and the IAEA. The Meeting mainly revised the course contents and the schedule for 2021, aiming to devise how to successfully implement the project under the prolonged pandemic. Logistics for the two training courses postponed to 2021 were also discussed and, as a result, it was decided to conduct the events virtually, starting from the training course on multidisciplinary approach to palliative radiotherapy in cancer treatment in March 2021.



RAS6087	Enhancing Medical Physics to Develop GPs through Regional Leadership in Standards and Education and Training Support
Objective	To improve health care to patients in the regional through the application of appropriate, effective and safe radiation medicine, utilizing competent medical physicist, consistent with IAEA requirements and guidelines

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Expert	Expert Mission	To review radiotherapy resources and references for an online platform	17-20 Feb.	Malaysia
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, and agree on measures to ensure achievement of project objectives	17-18 Nov.	IAEA
Expert	Home-Based Assignment	To enhance the AMPLE resource on CLP4NET for medical physics clinical training	13 days	Slovakia
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	Australia
Expert	Home-Based Assignment	To enhance some functions of advanced medical physics learning environment (AMPLE)	5 days	Slovakia
Expert	Home-Based Assignment	To provide assistance for the virtual final examination	5 days	Australia
Expert	Home-Based Assignment	To provide assistance for the virtual final examination	5 days	India

Project highlights for 2020

An Expert Mission was held on 17-20 February 2020 in Putrajaya, Malaysia, to review radiotherapy resources for medical physics clinical training as found on the e-learning tool, Advanced Medical Physics Learning Environment, (AMPLE). The clinical training was continued by the IAEA-supported pilot and independent programmes. An online oral assessment of radiotherapy candidates was successfully carried out in October 2020, which demonstrated that some aspects of clinical training assessment could be achieved remotely. In addition, a home-based assignment to improve the ability of AMPLE to track progress of residents in clinical training was completed. These improvements are to be piloted by Thailand before general release for users in early 2021.

The project review meeting was held virtually on 17-18 November 2020 due to the COVID-19 pandemic, involving 16 participating GPs. It was strongly recommended at the meeting that the project be extended for one more year to complete physical activities, including orientation for clinical training in some participating GPs.

RAS6093	Strengthening Capacity to Manage NCDs Using Imaging Modalities in Radiology and Nuclear Medicine
Objective	To implement better management and control of non-communicable diseases (NCDs) in the RCA region in line with UN SDGs and WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, agree on measures to ensure achievement of project objectives	5-6 Nov.	Virtual

Project highlights for 2020

The project progress review meeting was held virtually on 5-6 November 2020 due to the COVID-19 pandemic, in cooperation with the IAEA and Korea Institute of Radiological & Medical Sciences (KIRAMS). A total of 19 participants attended the meeting and reviewed the implementation of the project and the impact of the pandemic in 2020. The participants discussed and agreed on the work plan of the project in 2021, taking into account the prolonged impacts of the COVID-19 situation. Regional training courses and expert missions were revised either to be held virtually or to be postponed. Each participating GP was assigned with a specific topic for developing e-learning modules.



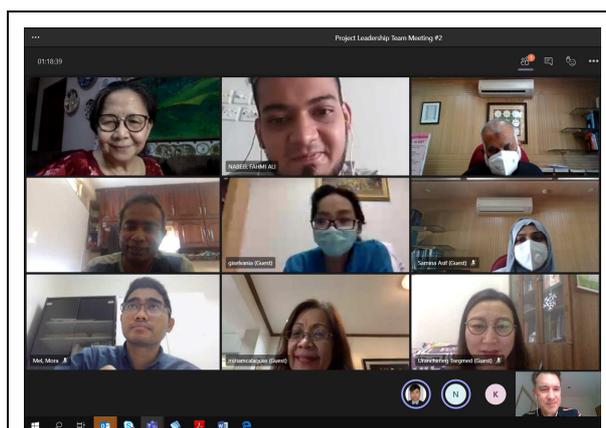
RAS6096	Empowering Regional Collaboration among Radiotherapy Professionals through Online Clinical Networks
Objective	To ensure that cancers in RCA low and middle income countries (LMICs) are treated in line with internationally accepted standards of care and tailored to the individual patient and to local resources to improve survival and quality of life of cancer patients

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	15-16 Sep.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	New Zealand

Project highlights for 2020

This project commenced in 2020 to support the practice of radiation oncologists in the Asia-Pacific region through Virtual Tumour Boards (VTBs). The Tumour Boards are regular meetings that allow doctors to review and discuss the treatment options of individual cancer patients. Although they have been shown to improve the quality of care, many cancer clinics in low- and middle-income countries do not have the resources. To improve patient outcomes, VTBs use video conferencing technology to allow oncologists to discuss difficult cases with international experts and colleagues in countries with similar resource constraints. The first project coordination meeting was held virtually on 15-16 September 2020 due to the COVID-19 pandemic. VTBs meetings from November involved oncologists from 16 GPs and were well suited to the new norm. The Project Leadership Team also met monthly to ensure they functioned effectively and to guide future development, including the incorporation of a formal educational component.



Monthly Meeting of the Project Leadership Team

RAS6097	Enhancing Capacity and Capability for the Production of Cyclotron-Based Radiopharmaceuticals
Objective	To enhance disease control in the Asia Pacific region through strengthening capacity and capability for qualified cyclotron produced radiopharmaceuticals for imaging and treatment

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	10-11 Sep.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	Korea

Project highlights for 2020

This project commenced in 2020 to enhance the capability of the GPs in disease control through precise diagnosis and early detection of diseases and decision of proper treatments. The first project coordination meeting was held virtually on 10-11 September 2020 due to the COVID-19 pandemic, in cooperation with the IAEA and Korea Institute of Radiological & Medical Sciences (KIRAMS). The Meeting was attended by 19 experts from the participating GPs. In preparation of the meeting, a survey was conducted on the infrastructures related to cyclotron-based radiopharmaceuticals production of the GPs. The result and a summary of the interested radiopharmaceuticals production of each GP was shared at the meeting. The Meeting also reviewed and agreed on the work plans, and further discussed the necessity to expand the duration of the project.

➤ **Environment**

RAS7028	Enhancing Regional Capabilities for Marine Radioactivity Monitoring and Assessment of the Potential Impact of Radioactive Releases from Nuclear Facilities in Asia-Pacific Marine Ecosystems
Objective	To improve the integrated regional quality-assured capabilities for marine radioactivity monitoring and for impact assessment of routine and accidental releases of radioactivity into the marine environment

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Workshop on Radiological Dose Assessment	To enhance regional capabilities in dose assessment associated with radioactive contamination in the marine environment	24-28 Feb.	Philippines
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, agree on measures to ensure achievement of project objectives	11-13 Nov.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on an interim coordination meeting	20 days	Australia

Project highlights for 2020

The regional workshop on radiological dose assessment was held on 24-28 February 2020 in Manila, Philippines. The main outcomes were coordination of approaches, training and development of a trial-run of a cooperative seafood dose assessment that spanned the range of the participating GPs. The workshop was successful in coordinating data and approaches for biota and human consumer dose assessment and increased not only confidence of the GPs in implementing valid dose assessments but also enhanced ongoing connection and communication on this topic.

The progress review meeting was held virtually on 11-13 November 2020 due to the COVID-19 pandemic, where the participants discussed the project achievements and impact of the pandemic on national/regional work plans. In addition, regional skills in marine environmental sampling that was interpreted by the data submitted to the Asia-Pacific Marine Radioactivity Database (ASPAMARD) were discussed. Approximately 37,000 data points of anthropogenic and natural radionuclides were submitted to the group in 2020 and will be shared with the Marine Radioactivity Information System (MARIS) of the IAEA and available for the relevant experts.



Workshop on Radiological Dose Assessment
February, Philippines



Project Review Meeting, November, Virtual

RAS7031	Assessing the Vulnerability of Coastal Landscapes and Ecosystems to Sea-Level Rise and Climate Change
Objective	To improve capacity of coastal countries in the Asia-Pacific region to use radiometric and isotopic techniques to ascertain coastal vulnerability and resilience to climate change in the 21st century

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	Project Review Meeting	To review and assess the progress of project implementation, discuss and update work plans, agree on measures to ensure achievement of project objectives	8-9 Oct.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the project review meeting	20 days	Australia

Project highlights for 2020

The project review meeting was held virtually on 8-9 October 2020 due to the COVID-19 pandemic, involving experts from 14 GPs to discuss the impacts of the pandemic on the project work plan. The Meeting identified the existing knowledge gaps within the GPs and assessed the status of their national programmes. It also assisted in matching the equipment and analytical needs of the GPs with available resources in the region.

In addition, to compensate for the regional training course delayed due to the pandemic, a lecture on the application of stable isotope analysis for sample collection and analysis by subject-matter-experts was held in conjunction with the project review meeting. Instructional materials were provided to assist the GPs to build human capacity in nuclear techniques in their respective countries. The GPs have established their national programmes and are progressing with the study site selection, sampling and analyses with slight shifts in the dates within the programmes.

RAS7035	Enhancing Regional Capability for the Effective Management of Ground Water Resources Using Isotopic Techniques
Objective	To enhance management of ground water pollution using isotopic techniques

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	10-11 Sep.	Virtual
Expert	Home-Based Assignment	To prepare a document on “Development of a miniaturised and durable CO2 sample preparation and absorption line” for C-14 analysis using liquid scintillation counter	20 days	India
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	China
Expert	Home-Based Assignment	To develop remote-access training materials for the groundwater hydrology using tracer	20 days	Japan

Project highlights for 2020

This project commenced in 2020 to enhance the capability of the GPs in the application of isotopic techniques in water resources management. Special emphasis was placed on the investigation of the cause and fate of groundwater pollution to identify the sources of groundwater contamination. The first project coordination meeting was held virtually on 10-11 September 2020 due to the COVID-19 pandemic, involving participants from 15 GPs and the IAEA. The Meeting discussed regional work plan based on the proposals of national work plans and requirements. In addition, it was agreed to conduct virtual training courses both regionally and nationally to sustain and further enhance the existing capabilities in the region.

To compensate for the trainings delays, due to the pandemic, experts were recruited to prepare documents that would support the project’s goal to develop trained human resources and a comprehensive database of isotopes and chemical constituents.



RAS7037	Enhancing Wetland Management and Sustainable Conservation Planning
Objective	To enhance the sustainable development of wetlands and their ecosystem services in the Asia Pacific Region

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	8-9 Sep.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	Australia
Expert	Home-Based Assignment	To lead the preparation of a training manual	20 days	Australia

Project highlights for 2020

This project commenced in 2020 to enhance the capability of the GPs in the sustainable management of wetlands by using stable isotopic techniques which clarify the movement of carbon between components of wetland systems. The first project coordination meeting was held virtually on 10-11 September 2020 due to the COVID-19 pandemic, attended by experts from all participating GPs. The Meeting clarified the scope and expectations of the project, identified gaps in expertise and instrumentation and, subsequently, the ways to fill the gaps. The Meeting also discussed and arranged the work plans for the implementation of the 4-year project. An expert working group for overseeing the progress of a training manual was formed following the meeting and met in November and December 2020 to agree on the scope of the report.



➤ **Radiation Safety**

RAS9092	Strengthening the Capacity to Respond to Radiological Emergencies of Category II and III Facilities
Objective	To ensure radiation safety for workers and the public during nuclear or radiological emergencies in the RCA region

Project Activities in 2020

Event	Title	Summary of Purpose	Dates /Duration	Host Country
Meeting	First Coordination Meeting	To review the current status of the participating GPs, discuss and agree on project implementation and regional/national work plans	29-30 Oct.	Virtual
Expert	Home-Based Assignment	To assist in the preparation, organization, implementation and reporting on the first coordination meeting	20 days	Korea

Project highlights for 2020

This project commenced in 2020 to ensure radiation safety for workers and the public during nuclear or radiological emergencies through the application of protection strategies based on the requirement of the IAEA safety standards. The first project coordination meeting was held virtually on 29-30 October 2020 due to the COVID-19 pandemic, involving experts from 15 GPs. The GPs presented country reports and analysed their emergency preparedness and response (EPR) arrangements and protection strategies. Regional and national work plans were also discussed and finalised at the meeting. To compensate for the project activities postponed due to the pandemic, the meeting recommended to include a new webinar modality in 2021 and to extend the project duration for one more year until 2024.



First Coordination meeting, October, Virtual