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Foreword by the Director – Division for Africa (TCAF)

Dear Colleagues, Ladies and Gentlemen,

I am very pleased to share with you the second TC Africa Newsletter of 2022. The COVID-19 pandemic led to a disruption of some of our services, but I am now glad that we are almost returning to normal operations and the Division of Africa will continue to deliver the TC programme to Member States in a more efficient, effective and innovative way.

In the second quarter of 2022, Rwanda's New CPF was signed and many training courses, meetings and expert missions were implemented both in person and virtually. Some of the major meetings organized include the NLOs/AFRA NCs Induction Meeting, 1st Coordination Meeting for the New Energy Planning Regional Project (RAF2013), 1st Coordination Meeting for the Smart-Agriculture Practices (RAF5086), 2nd African Food Safety Workshop (RAF5084), Meeting with African Experts to Develop Curriculum for Master's in Human Nutrition (RAF6059) and the 1st Coordination Meeting of the Soil and Water management Project (RAF5090).

The trainings hosted under TCAF include the Regional Training Course (RTC) on dosimetry audits for French-speaking Countries under project RAF6055, Virtual Regional Training Course on Clinical Training Programmes in Medical Physics (RAF6055) and Virtual Training Course on Authorization and inspection of Linear Accelerator (Linac) Facilities used in radiotherapy (RAF9065).

I encourage all to take advantage of the online tools and platforms available to continue engaging with our partners for the successful implementation of the TC programme. This will ensure stronger coordination of the national TC programme for better results. The advantage of online tools is that they provide wider coverage and mitigate the current travel restrictions due to the ongoing Covid-19 pandemic. The 2022 TC programme will continue to be implemented using a blended modality, with in-person and virtual participation to address the needs of Member States. As the world adapts to new challenges and creates new solutions, I urge all to take the lead in applying these innovations in our daily work to promote Africa as a successful example of adaptation of new technology, resilience and innovation.

Under the IAEA Rays of Hope initiative, several Consultative Meetings were held with the Ministers of Health of Ethiopia, Ghana, Madagascar, Sierra Leone, and Togo to discuss their needs to establish or expand radiotherapy facilities.

As we start designing the TC cycle 2024–2025, I wish to commend the commitment of African Member States under the shared responsibility framework. We look forward to high quality projects that will produce tangible results with greater impact. The IAEA team, led by the PMOs.

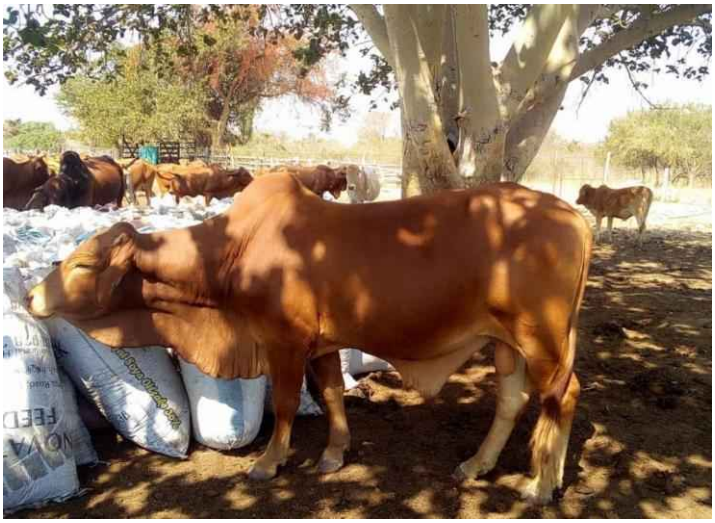
I take this opportunity to thank you all for your active engagement in the national TC programmes.

Shaukat Abdulrazak, Director, Division for Africa

Web Story 1: Food Safety in Zambia with Nuclear Techniques

For many years the IAEA and the United Nations Food and Agricultural Organization (FAO) have worked in collaboration with national authorities to help and support the Zambia's efforts to improve food safety in staple crops and animal products. Recently, these efforts have focused on meat and other animal products. Approximately half of urban consumer's food expenditure is of livestock food products and grains, whereas the rural population is thought to rely more heavily on grains Experts are working to tackle livestock and human health problems related to meat and other foods derived from animals.

The IAEA and FAO are working with Zambian experts to address drug resistant microbes as well as food contamination in meat and other animal products. Part of this involves strengthening the capabilities of the country's Central Veterinary Research Institute (CVRI). Providing new equipment to analyse hazardous chemicals in food and transferring novel analytical technology, the IAEA is supporting the CVRI in delivering better services and has increased the technical knowledge of laboratory analysts through guidance and training. The ultimate aim is to ensure food is up to quality standards and rates of food poisoning are lowered.



The IAEA is supporting Zambia in testing beef and products derived from cattle and other animals for residues and contaminants that can lead to food poisoning. (G. Monga/CVRI)

"Food safety is a priority for Zambia, and we are glad for the IAEA's support in building our laboratory capabilities and encouraging collaboration among our institutions," said Gerald Monga, Principal Veterinary Research Officer at the CVRI. The presence of animal and zoonotic diseases such as colibacillosis and coccidiosis burdens animal production and requires veterinary drugs for treatment and control. However, remnants or drug residues which remain in animal products increase health risks, lead to drug resistance, and impede exports.

"I learned new rapid and confirmatory techniques for testing residues and contaminants in food. This knowledge that I also shared with colleagues has enabled us to increase capability to ensure that animal products are safer and that relevant production standards are adhered to," said Monga.

"The meat processors are happy with the new laboratory testing as they can use the results from the residue testing to prove compliance of required standards," said Monga. This has allowed for exports to Angola, the Democratic Republic of the Congo and Zimbabwe, among others, which was previously not possible or constrained due to lack of residue testing. IAEA support has also enabled CVRI to attain and maintain accreditation to ISO 17025 — a measure of competence and reliability by end users of the analytical services.

Food Safety in Zambia with Nuclear Techniques | IAEA

Amal Elrefaei, PMO, TCAF

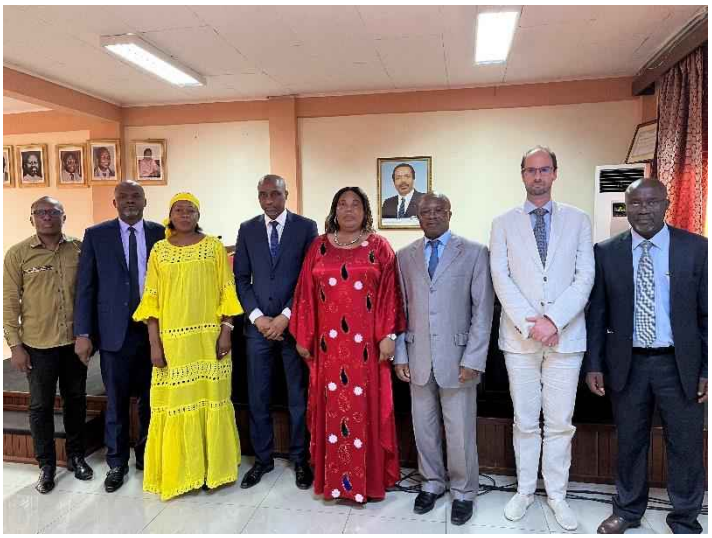
Web Story 2: The impact of the Agency's work: A joint TCAF-OPIC mission in Cameroon

Documenting the impact of the work of the Agency, and its partners, is part of our jobs. Such visibility is important so that we can show to both Member States and donors that their money – and the Agency's work – make a real difference on the ground.

TCAF and OPIC organized a joint mission to Cameroon, to do just that. We look to publish five stories and many social media posts illustrating how carious nuclear technologies help the country achieve development objectives.

Keep an eye out for our stories on iaea.org and meet the farmer in northern Cameroon, whose goat are no longer dying from PPR thanks to improved diagnosis of animal diseases; find out more about a resident in central Cameroon whose house – along that of many neighbors – has high concentration of radon and what he does to

lower the risk of getting lung cancer; read the story of the radiation oncology staff of general hospital in the country's second largest city – all of whom have been trained under the TC programme; see how nuclear security has improved in the country as a result of our cooperation (Improving nuclear security in Cameroon | IAEA); learn more about improvements of food safety in the country, both when it comes to domestic consumption and exports.



TCAF-PMO, Abdou Ndiath, meeting with Secretary General, Minister of Higher Education and Research

All of these are stories of people – people whose lives have been helped. They are the faces behind the numbers; examples for the many for whom we work.

While some reporting is possible from Vienna, getting the real story requires presence on the ground, getting to know people, interviewing them and telling their stories. Articles like this are also often picked up by the local press and UNDG and other UN agencies – further helping the Agency to establish itself as a player in the development field. It also makes the countries extremely proud to know to have been selected for such coverage by the Agency.

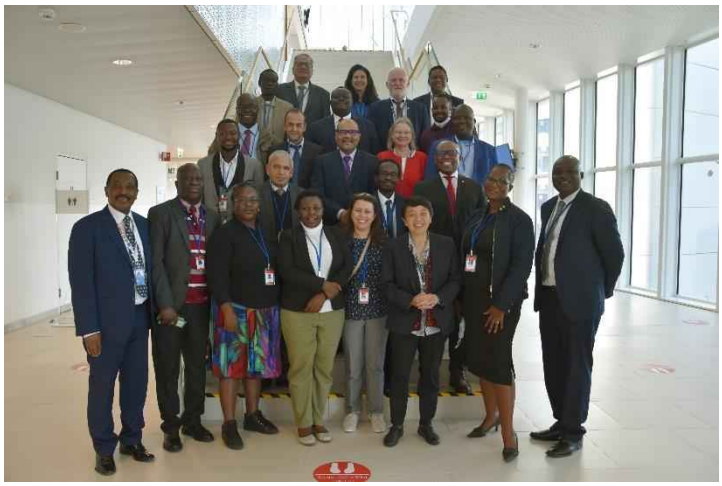
Abdou Salam Ndiath, PMO, TCAF

Miklos Gaspar, SH, OPIC

1st Coordination Meeting for the Smart-Agriculture Practices (RAF5086)

The first coordination meeting of the regional project "Promoting Sustainable Agriculture under Changing Climatic Conditions Using Nuclear Technology (RAF5086)" was held from 9 - 13 May in IAEA headquarters to concertize the strategy towards achieving the intended results under RAF5086. Specifically, it was meant to achieve the following:
Firm up the results framework for RAF5086 (create a performance measurement framework).
Review status of project implementation.
Agree result-based groupings of Member States under the regional project.

Review implementation modalities: success stories, report, guidelines, and practical recommendations for accelerated achievement of results.



Participants from 17 African States at the VIC, IAEA Headquarters during the First Coordination Meeting of RAF5086

The meeting, attended by 17 project coordinators (PCs), as well as IAEA section heads and technical officers, was opened by the Director of the Division for Africa, Shaukat Abdulrazak. In his opening remarks, Director Abdulrazak referred to food and agriculture as a priority area of focus for the Division for Africa, which took up 35.6% of the TC Africa Budget. "RAF5086 was central towards the overall success of the Food and Agriculture programme for Africa. There were opportunities to optimize under the project: new Member States joining, new TO, and new Project Scientific Consultant (PSC)" said Director Abdulrazak. He added, "The project should have all African member states participating in it to have continental coverage in requisite data acquisition".

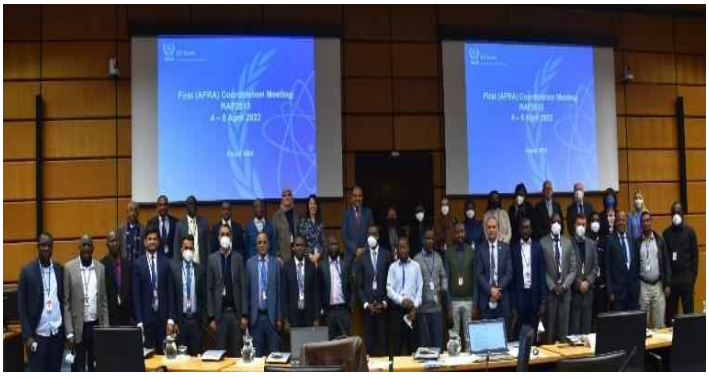
A segment of the meeting was dedicated to the application of the Cosmic-Ray Neutron Sensor (CRNS). Mr Modou Mbaye - an international expert from Senegal - delivered three technical presentations on a high-resolution soil moisture map using both remote sensing imagery (Sentinel-1) and Cosmic-Ray Neutron Data (case study Morocco) under RAF5086.

In this area, it was decided that Training will be provided to African scientists on the use of CRNS. A regional training course on CRNS will be held from 18 to 22 July 2022. It will be hosted at the Seibersdorf laboratories in Austria. All countries participating in RAF5086 are expected to have one candidate participate. In addition, it was decided that COSMOS-Africa which is an African network of cosmic-ray neutron soil moisture sensors shall be developed. This shall constitute a key deliverable under the project.
In the course of the meeting, different components of implementation such as local and conventional procurement and the experts missions were agreed, and the priority expert missions were specified.

Thuloane Tsehlo, PMO, TCAF

1st Coordination Meeting for the New Energy Planning Regional Project (RAF2013)

The IAEA has launched a new Regional Technical cooperation, Project RAF2013, entitled 'Developing, Expanding, and Reinforcing Energy Planning Capabilities — Phase II (AFRA),' for a duration of four years. The First Project Coordination Meeting took place at the IAEA's headquarters in Vienna, Austria from 4 – 8 April 2022



Representatives from 22 participating countries attended the meeting

The Meeting gathered representatives from 22 participating countries, represented by two counterparts from two different institutions as per the project entry questionnaire. These are: a representative from the leading Ministry or government department which has energy planning as a core function (Main counterpart) and a representative of an academic, education, university or research institution relevant to energy planning (Second counterpart). The project focuses on strengthening regional capacities for energy planning using the IAEA planning tools with the objective of providing participating Member States with an entry point to independently maintain and expand their national models for long-term planning.

The second phase of the project RAF2013 builds on the achievements of the AFRA regional project RAF2010 on Developing, Expanding and Reinforcing Energy Planning Capabilities including Nuclear Power (AFRA) and target the development of 5 sub-regional energy reports for demand and supply. The project also aims at fostering synergies and collaboration with the regional initiatives and with the power pools. Last but not least, the project aims at building capacities for regional trainers as well as for identifying regional training centres.

Imen Bentouhami, PMO, TCAF

Rays of Hope: Consultative Meetings with Ministers of Health of Ethiopia, Ghana, Madagascar, Sierra Leone, and Togo

Since its launch on 4 February 2022 on the margins of the 35th African Union (AU) Summit at the African Union headquarters in Addis Ababa, the IAEA Rays of Hope (RoH) initiative has gained momentum. Currently 14 African Member States have joined the initiative, and more are interested in participating in it. In early May 2022, a series of meetings were organized by the IAEA with the Ministers of Health of Ethiopia, Ghana, Madagascar, Sierra Leone and Togo. The purpose of the meetings was to seek from the Minister of Health a status update on the development of radiotherapy, nuclear medicine and diagnostic radiology activities in the country, on the planned national programmes and the needs identified. In addition, the meeting discussed radiation safety related issues. During the discussion, the focus was on the country's needs and how these could be addressed within the framework of the RoH initiative.

Ethiopia has three operational radiotherapy centers in Jimma, Haremaya and Black Lion, each equipped with a Linac machine. Two additional centres are in the pipeline, namely in Hawassa where the construction has been completed and a Linac machine is on site, and at Gondar where the bunker construction is close to completion with a Linac machine installation planned. There are twin bunkers for each of the two centres.

Ethiopia has trained radiation medicine personnel; however, they need 50 radiation oncologists and 10 radiotherapy medical physicists. In addition to 6 LINAC machine procured by the government (MOH) there is a need for additional 6 LINAC machines to equip the remaining vacant bunkers in each center. Currently there is no functional nuclear medicine PET Center in Ethiopia. The Nuclear Medicine service is under rehabilitation at the Black Lion hospital. A new center is under construction at St. Paul's Hospital in Addis Ababa, with services to include the establishment of hospital cyclotron and PET/CT. There is an overall need of strengthening cancer registry in all cancer care expansion centers and developing standard safety procedures.

Ghana currently has two governmental radiotherapy centres and one private facility. The future plans for Ghana to establish an additional three radiotherapy centres by 2025 and upgrade the existing two public centres. The construction of these facilities is to commence in 2023. The required equipment includes 8 Linac, 3 HDR brachytherapy and 3 CT Simulator. The Minister of Health of Ethiopia has indicated possible support from the EU in setting up these centres. The future plans also include the establishment of PET Nuclear Medicine Centre which should be completed by 2026. The required equipment includes a cyclotron, PET/CT scanner and a SPECT/CT. Through Rays of Hope, the IAEA will support Ghana in establishing the additional two radiotherapy centres, the additional nuclear medicine centre and and in training personnel.

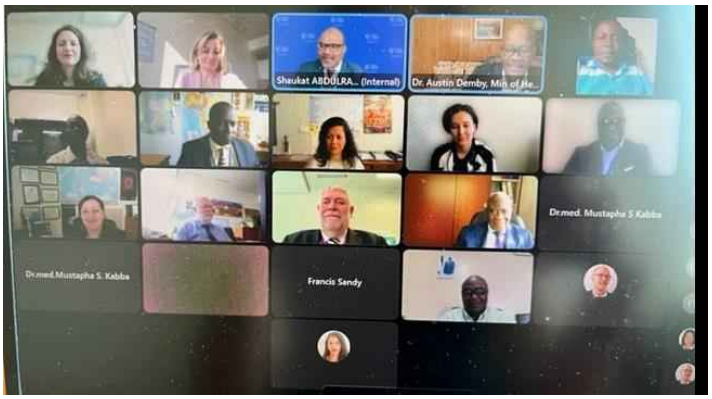


Photo: Virtual meeting on the Rays of Hope initiative with Dr Austin Demby, Minister of Health of Sierra Leone; Photo credit: V. Varbanova

The existing radiotherapy centre in Madagascar, after being shut down since 2001, was rehabilitated to reopen in 2021. The IAEA provided brachytherapy equipment and a treatment planning system. Since 2016, fourteen long-term trainings were provided for staff. Madagascar is looking for financial resources for the acquisition of radiotherapy equipment. However, it is seeking IAEA assistance for strategy to mobilize the needed resources since the available budget is not sufficient to meet the country's needs. In addition, the Agency is supporting government efforts for operationalizing the nuclear medicine at the Andohatapenaka Hospital. The full installation of the new Gamma Camera procured by the Agency for the hospital, will be completed in 2022.

Currently there are no nuclear medicine or radiotherapy facilities established in Sierra Leone. The country has mobilized some financial resources (7 m USD) for the construction of the radiotherapy facility and the acquisition of radiotherapy equipment. Sierra Leone has expressed the desire to start with one Co-60 teletherapy and one LINAC machines with all other related accessories to start treating cancer patients. However, it is seeking IAEA assistance to mobilize more resources to cater for some of the needs including human resource development, civil works and equipment since the available funds are not sufficient. Sierra Leone has indicated that they would like to benefit from the Rays of Hope Initiative to assist them get enough funding for the construction and operationalization of the radiotherapy facility at Kerrytown.

The Government of Togo has achieved two important milestones: the Cancer Registry had been developed and the National Cancer Control Plan (NCCP) had been completed and validated. The Minister of Health informed that Togo's objective is to establish its first public radiotherapy Centre by 2025. Therefore, Togo counts on the collaboration of its partners and donor countries to mobilize the resources needed. Togo needs to elaborate a human resources development plan and a bankable document. With the NCCP now validated, the IAEA will support Togo to mobilize resources once there is a clear definition of financial needs and the government budget available. The IAEA is providing support under the ongoing technical cooperation (TC) project on health in which some of the outputs would be cancer registry support, bankable document, human resources development plan, protocols, and legal instruments. Togo has also submitted a TC project design on health for the next TC Cycle 2024-2025.

Valentina Varbanova, PMO, TCAF

Meeting with African Experts to Develop Curriculum for Master's in Human Nutrition (RAF6059)

Micronutrient deficiencies are highly prevalent in Africa and are some of the major factors related to growth retardation, morbidity, mortality and slow psychomotor development and physical disability in children. Micronutrient deficiencies also affect women of reproductive age with significant adverse impact on offspring nutritional status and health in early life and limited development and human potential.

Children's diet in Africa is predominantly plant-based. Plant-based diets are often deficient in critical micronutrients such as iron and zinc and protein needed to metabolize these nutrients. Additionally, plant-based foods have naturally occurred compounds that compete with micronutrients for absorption sites in the gastrointestinal system. It's therefore important to design diets in a way that enhances micronutrient absorption from foods. However, there is limited technical know-how and laboratory capacity in Africa to assess micronutrient bioavailability from foods and how this relates to micronutrient status among vulnerable groups like children.

Under the project RAF6059, a task force meeting was held from 9-13 May 2022 in IAEA headquarters bringing together 13 participants and experts from 11 African countries to develop a curriculum for training towards an International Master of Science in Nutrition with Nuclear and Isotopic Techniques.

Meeting participants together with Dir-TCAF, Shaukat Abdulrazak, PMO and IAEA expert

Mr Victor Owino, Nutrition Specialist and RAF6059 Technical Officer presented a rationale and framework for the proposed curriculum. The curriculum is aimed to address unrelenting multiple burdens of malnutrition in Africa by specifically addressing the shortage of duly trained nutrition professionals to combat the problem.

Later during the week, Director Shaukat Abdulrazak, speaking to the participants, emphasized the need for a holistic approach to addressing malnutrition in Africa based on a 'from seed to fork approach' with cross-disciplinary players. He assured participants of his full support for this project objectives and urged the meeting participants to engage with their respective country stakeholders for advocacy and sustainability.

During the meeting, sample curricula were presented from Benin, Burkina Faso, Morocco, Nigeria, Senegal and South Africa to lay ground for the regional curriculum framing and to identify mandatory and optional modules and entry points for integrating nuclear techniques.

The meeting participants agreed to propose a Master of Science, which will be adapted to the global standards as well as give access to competitive employment in public and private sectors, NGOs and academia. It was agreed that the curriculum be designated as: "**MASTER OF SCIENCE IN APPLIED HUMAN NUTRITION AND NUCLEAR TECHNIQUES**"

All the objectives of the meeting were met, primarily the development of a draft curriculum with all the relevant sections & modules content, stakeholder mapping, host countries and workplan with next steps.

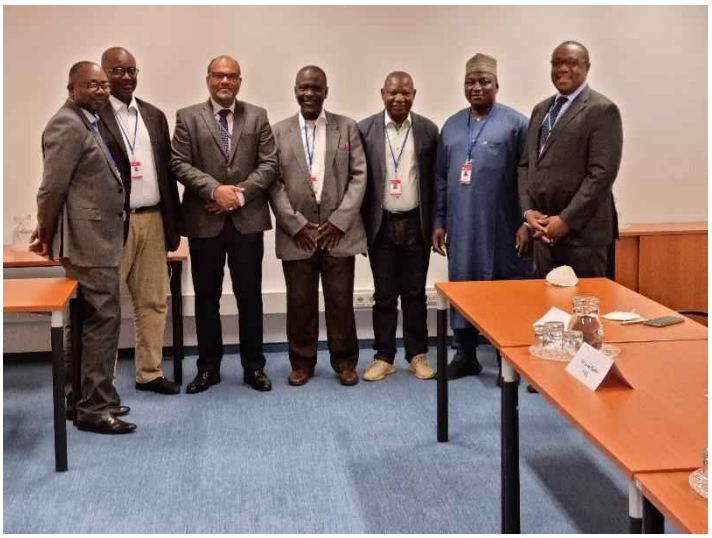
Major milestones include: 1) stakeholder meeting to validate the curriculum on 26 October 2022 as a pre-activity linked to the African Union Commission's 13th Africa Day for Food and Nutrition Security; 2) full approval of the curriculum in Ghana and Morocco by 31 May 2023 followed by nomination of students and 3) curriculum launch by 31 July 2023.

Anna Grigoryan, PMO, TCAF

Integrated Workplan (IWP) Meeting for Nigeria NPP

From 5 to 7 April 2022, the Division for Africa in collaboration with the Nuclear Infrastructure Development Section of the Department of Energy organized a meeting to review the Integrated Workplan (IWP).

The meeting brought together national representatives from the Nigerian Atomic Energy Commission (NAEC) and from the regulatory body, the Nigerian Nuclear Regulatory Authority (NNRA) in addition to the PMO and the Core Team of Technical Officers from relevant Technical Departments.



Following the PMO's presentation on the current status of the implementation of relevant national TC projects on NPP and radiation safety, the Technical Officers presented the different approaches and milestones to be followed to advance the development of the national nuclear power infrastructure of Nigeria.

Following a careful review and analysis of progress made to date, the meeting proposed and considered a series of activities related to the technology development, legal, radiation safety and nuclear security. Nigeria's Integrated Workplan was updated to reflect these activities, to be implemented in the next three years.

Mickel Edwerd, SH, TCAF

2nd African Food Safety Workshop (RAF5084)

77 participants from 33 African MSs attended the workshop

In cooperation with the Government of South Africa and the National Metrology Institutes South Africa (NIMSA), the IAEA organized the Second Africa Food Safety Workshop from 27 June to 1 July 2022 in Johannesburg, South Africa. 77 participants from 33 MSs were supported under the project RAF5084 to attend in the event including presentation of posters and oral talks. Among others, the workshop addressed a number of issues affecting Africa including consumer safety and trade rejections and received moral support from the African Union including a keynote presentation.

Sulafa Karar, PMO, TCAF

Virtual Regional Training Course on Clinical Training Programmes in Medical Physics (RAF6055)

The successful completion of a postgraduate academic programme in medical physics is part of the requirements to be recognized as a clinically qualified medical physicist (CQMP). The academic programme needs to be complemented by a structured clinical training programme in order to develop the competencies (intended as a combination of knowledge, skills and attitudes) necessary to practice in the clinical environment. The aim of a supervised, hospital-based clinical training programme is to provide a resident (also known as a registrar, intern or trainee) with the opportunity to develop competencies required to practice independently. National centres, even with limited radiation medicine facilities, are encouraged to

initiate programmes using the resources available. This may be limited to partial fulfilment of the programme that can be supplemented by regional cooperative efforts, in order to develop the entire set of competencies.

To support Member States establish clinical training programmes (CTP), under AFRA regional project "Improving the Quality of Radiotherapy in the Treatment of Frequently Occurring Cancers (RAF6055)", a virtual regional training course was held on Clinical Training Programmes in Medical Physics. 21 participants from 9 member states as well as 3 lecturers attended the course, which was held virtually over nine sessions during the period 11 May to 9 June 2022.

This course gave advice to supervisors of CTPs and country coordinators on possible pathways in the introduction of new structured and supervised clinical training programmes for medical physics in Africa and familiarized them with the roles and responsibilities of entities such as: national responsible authority, steering committee, national programme coordinators supervisors and residents.

At the opening of the course, participants described in brief their plans to establish a CTP, with timeframes.

During the course, the lecturers shared their experience with the participants on how to establish a CTP and explained the details, such as number of supervisors, residents, and conclusion of a CTP, final exams, types and methods as well as the overall structure of the programme. They also shared their views and experiences with low-stakes assessment, how to provide feedback to residents all along the duration of the clinical training. Furthermore, lecturers provided examples of competencies in a CTP and local adaptation, tools for assessment as per IAEA guidelines: portfolio, logbook, final exam, sharing of anonymized portfolios and logbooks.

Throughout the course, participants were divided into working groups and were asked to:

- Prepare and refine an action plan with a timeframe and indicators on how to establish their CTP.
- Prepare a workplan for a resident to complete a competency N including questions and actions to assess and ensure assessment is harmonized.
- Prepare questions and rubrics for a final examination including oral and practical exam.

Furthermore, through some case studies, scenarios were provided by the lecturers and methodologies for providing feedback were discussed with the class.

At the end of the breakout sessions, all experts and participants attended a panel discussion and discussed the clinical training in medical physics in the African region, status and the way forward.

Valentina Varbanova, PMO, TCAF

Virtual Train-the -Trainers Regional Workshop for Radiation Protection Officers (RAF9067)

This event took place from 25 – 29 April 2022, within the framework of TC Regional project RAF9067**,** "Sustaining the Establishment of Education and Training in Radiation Safety and Human Resource Development — Phase II (AFRA)".

Radiation Protection Officer is defined in the International Basic Safety Standards (GSR Part 3) as "a person technically competent in radiation protection matters relevant for a given type of practice who is designated by the registrant, licensee or employer to oversee the application of regulatory requirements".

The purpose of the event was to provide participants with theoretical knowledge of roles, duties and competence of a radiation protection officer at medical and industrial facilities; and practical skills to design and deliver a training sequence on technical topics; in order to act as trainer of radiation protection officers in their countries.

The workshop brough together 16 participants from Member States participating in this project. Participants had secondary or tertiary education with a relevant technical or scientific background in the field of radiation safety. Some were very familiar with the role and duties of the radiation protection officer, as provided in the International Basic Safety Standards.

The workshop was very interactive, and the participants contributed to individual and group exercises. They also prepared some individual work after the on-line sessions. The training provided some videos on role, duties and competence needs for radiation protection

officers as well as on planning lessons, communication with a group and working with 21st century teaching aids and a forum for discussion. Several resources for future training activities were also offered.

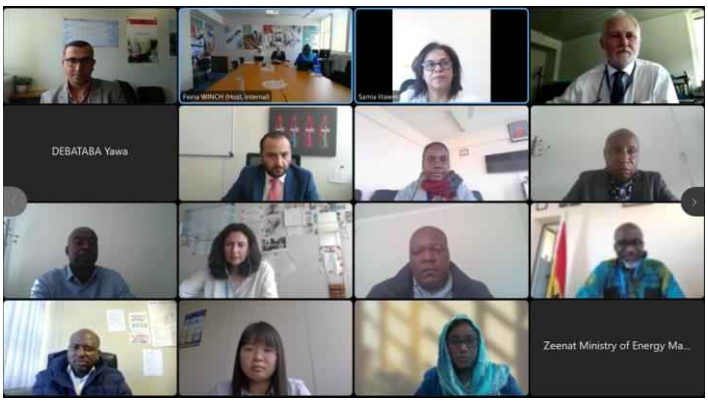
The event was conducted through web-based facilities virtually (Online). Selected participants will be informed in due course on the procedures to be followed regarding the communication platform that will be used and the way of work during the online sessions.

Following the completion of this workshop, participants are expected to become trainers of radiation protection officers at medical and industrial facilities in their countries; as such they shall be working in an organization that provides training in radiation protection.

Mickel Edwerd, SH, TCAF

NLOs/AFRA NCs Induction Meeting

NLOs and AFRA National Coordinators represent the primary interface between African Member States and the TC programme, and are responsible for communicating their national priorities, coordinating project activities, and advocating for the safe and peaceful use of nuclear technology. From 13 to 15 June 2022, newly appointed National Liaison Officers (NLOs) and National Coordinators (NCs) from 14 countries gathered at an IAEA Induction workshop to better understand their role, responsibilities, and the resources available to enhance their national IAEA TC Programme.



Virtual NLOs/AFRA NCs Induction meeting

During the workshop, NLOs and AFRA NCs explored how to align IAEA TC activities with the global and continental Agenda to enhance and expand the impact of technical cooperation programme in the region. The last day of the 3-days NLO Induction Workshop was devoted to exploring gender mainstreaming and Rays of Hope initiatives, including IAEA Marie Sklodowska-Curie Fellowship Programme, and its continuing support to women's professional networks in the region.

Sulafa Karar, PMO, TCAF

Azza Kashlan, PMO, TCAF

Handover Ceremony of the INIR Phase 1 Report (UGA2003)

In the framework of project UGA/2/003 - Supporting Nuclear Power Infrastructure Development in Uganda, an Integrated Nuclear Infrastructure Review (INIR) Phase 1 Mission, hosted by the Ministry of Energy and Mineral Development (MEMD) of Uganda, took place in Kampala from 26 November to 6 December 2021. The aim of the mission, carried out at the request of the Government of Uganda, was to review the country's infrastructure development for a nuclear power programme. The INIR team reviewed the status of nuclear infrastructure development in Uganda using Phase 1 of the IAEA's Milestones Approach.

INIR Phase 1 official handover ceremony, hosted by H.E. President Yoweri Museveni. Photo credit: Ministry of Energy and Mineral Development.

The INIR team concluded that the Government of Uganda is committed to developing the required infrastructure for nuclear power in a coordinated approach with all concerned stakeholders. Uganda drafted an energy policy that includes nuclear power and established a Nuclear Energy Programme Implementing Organization (NEPIO). Uganda's NEPIO has completed several studies on different infrastructure issues and drafted a Nuclear Power Roadmap for Uganda that makes recommendations for key decisions on the

development of the infrastructure for nuclear power in the short, medium, and long term.

The INIR team made recommendations and suggestions aimed at assisting Uganda in making further progress in the development of its nuclear infrastructure and its readiness to construct the first nuclear power plant in the country. Following the finalization of the report, Ms Aline Des Cloizeaux, Director of the Nuclear Power Division, Department of Nuclear Energy, officially handed over the INIR Phase 1 Mission in a ceremony hosted by H.E. President Yoweri Museveni, which took place on 10 May 2022 in Entebbe.

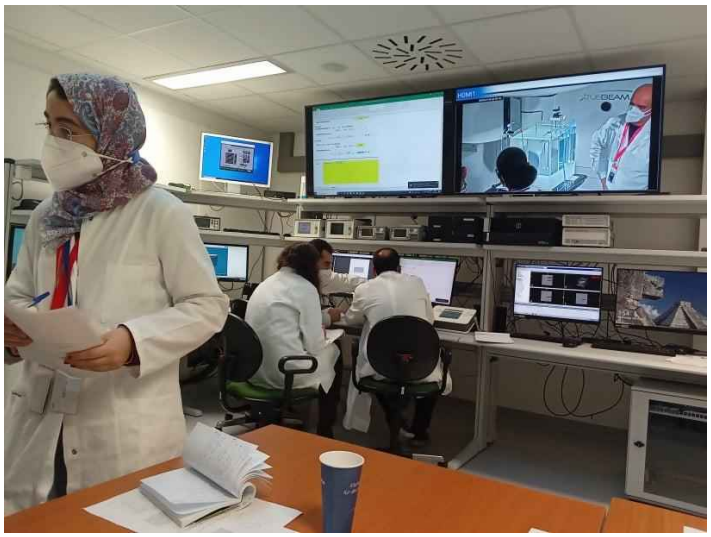
Uganda has developed a national action plan to address these recommendations and suggestions. With this action plan, Uganda and the IAEA will develop an Integrated Work Plan to identify the IAEA activities to support Uganda's efforts for nuclear power infrastructure development.

Valentina Varbanova, PMO, TCAF

RTC on Dosimetry Audits for French-Speaking Countries

It is generally understood that the aim of dosimetry audits is to ensure high and continued quality in radiation treatment for all patients, in order to optimize clinical outcomes. The radiation treatment process is complicated and has many stages and many parameters, as well as requiring input from different professional groups. Dosimetry auditing is necessary in all areas of radiotherapy and for all processes and procedures. Therefore, to support African Member States build their capacity in dosimetry audits, the first-of-its-kind Regional Training Course (RTC) on Dosimetry Audits for English-speaking countries and for French-speaking countries" was held respectively from 14 to 18 February 2022 and from 7 to 11 March 2022 in the IAEA laboratories in Seibersdorf. The training courses provided participants with the necessary knowledge on remote and on-site dosimetry audit visits and promoted audit culture.

The RTCs took place in the framework of the TC regional project RAF6055, "Improving the Quality of Radiotherapy in the Treatment of Frequently Occurring Cancers (AFRA)", which aims to enhance the quality of the delivery of radiotherapy services in AFRA Member States through harmonized clinical training schemes and sensitization of policy makers.



Participants in the regional training course in IAEA laboratories in Seibersdorf

The training course consisted of lectures and relevant practical sessions in the IAEA Dosimetry Laboratory at Seibersdorf focusing on the characterization of solid-state dosimeters and hands on practical exercises performing measurements. 12 participants from 4 member states and 2 lecturers attended the French version of the training. The English version of the course was attended by 8 participants from 8 member states as well as 2 lecturers.

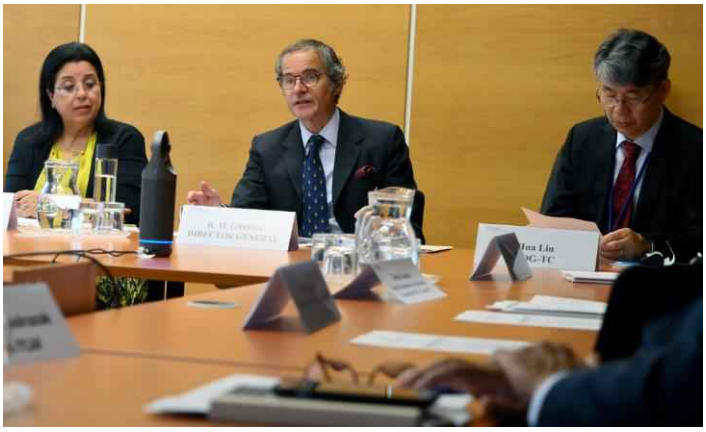
Through the course, participants received comprehensive information on:

- Types of audits
- Establishing and sustaining a national dosimetry external audit programme
- Characterisation of passive solid state dosimetry systems
- Overview of AFRA methodologies of dosimetry audits
- Methodologies for end-to-end dosimetry audits
- Uncertainty budget for dosimetry audits
- Reporting of dosimetry audit results
- Following-up of results outside acceptance criteria and resolving discrepancy
- Participation in the IAEA Dosimetry Audit Network
- Quality Management system (ISO/IEC 17025, ISO/IEC 17043).

Valentina Varbanova, PMO, TCAF

Progress in the Implementation of the Zoonotic Disease Integrated Action (ZODIAC) Project

- A virtual workshop on "Monkey pox and Lassa fever Infections in Animal Reservoirs and the Risks for Public Heath Transmission - What do we currently know and the way forward?" was held on 7 June 2022 to explore how nuclear techniques can help prevent outbreaks of monkeypox and Lassa fever under the IAEA's Zoonotic Disease Integrated Action (ZODIAC) initiative. Together with the IAEA, the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and international experts in the field, more than 250 participants from ZODIAC National Laboratories agreed to strengthen cooperation under this initiative and define research topics to understand the epidemiological role of animal carriers and reservoirs.



Opening of the Workshop on Monkey pox and Lassa fever by DG of IAEA, Mr Rafael Mariano Grossi, in presence of DDG-NA, Ms Najat Mokhtar, and DDG-TC, Mr Liu Hua

- Group Fellowships "Train-the-Trainer" on Whole Genome Sequencing - Ion GeneStudio S5 platform (the 3 first fellows from Indonesia, Senegal and Tunisia started their training in IAEA Laboratories in Seibersdorf in May 2022)
- Virtual Interregional Training Course on "The Use of IAEA Genetic Sequencing Services", held from 19 to 22 Apr 2022 (morning sessions for Member States from Africa, Europe and Asia & The Pacific) was attended by 197 participants from 53 MSs. The course resulted in ca. 20 new registrations to the IAEA Sequencing Services.
- Virtual Interregional Training Course on "The Use of IAEA Genetic Sequencing Services", held from 25 to 28 Apr 2022 (afternoon sessions for Member States from Africa, Europe and Americas) was attended by 238 participants from 62 MSs and resulted in ca. 65 new registrations to the IAEA Sequencing Services.
- Virtual Interregional Workshop on "Current Developments of the Whole Genome Sequencing Platforms and the Bioinformatics Data Processing", was held from 23 to 26 May 2022 (in cooperation with RER5025, RAS5085).
- Virtual Interregional Training Course on "iVetNet platform (data management and support for ISO certification)" was pre-recorded (video were recorded in English and subtitled in French and in Spanish) and was given access by all ZNLs in June 2022. Two virtual Q&A sessions were then held on 17 June 2022 to answer possible questions and comments from the ZNLs.
- Japan Mission approved to re-purpose part of their donation to ZODIAC Pillar I to procure equipment for additional ZNLs. Thirteen additional ZNLs have been selected for this 2nd phase of implementation (9 ZNLs for serology and molecular diagnostic packages and 4 ZNLs for WGS packages).

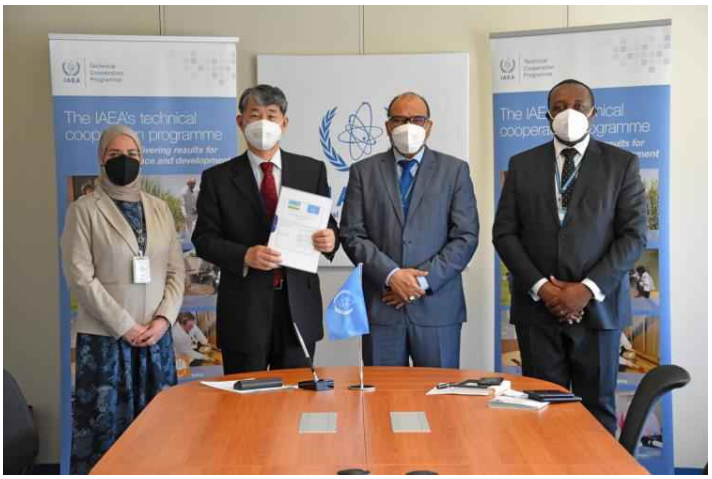
To know more about ZODIAC Initiative, ZODIAC Portal was officially launched. You can find recordings, presentations of the ZODIAC briefings and ZODIAC training courses at the following link:

Zoonotic Disease Integrated Action (ZODIAC) - Home (iaea.org)

Michel Warnaw, SH, TCAF

Rwanda's New Country Programme Framework Signed

On 12 April 2022, H.E. Ernest Nsabimana, Minister of Infrastructure, and Mr. Hua Liu, DDG-TC, virtually signed Rwanda's Country Programme Framework (CPF) for the period of 2022-2027.



DDG-TC Mr. Hua Liu accompanied by TCAF Director, Section Head and PMO signed Rwanda's CPF virtually.

Rwanda has been an IAEA Member State since 2012. Its 2022–2027 CPF identifies seven priority areas:

1. Nuclear and radiation safety and nuclear security
2. Food and agriculture
3. Human health
4. Water resource management
5. Environment management
6. Energy and industry
7. Nuclear knowledge development and management

Meetings Attended by DIR-TCAF

- DIR-TCAF held a virtual meeting with representatives of the Permanent of China, the China National Nuclear Corporation (CNNC) and the China Isotope and Radiation Corporation (CIRC) to review the draft Action Plan 2022-2023. This document includes a series of activities related to transfer of identified technologies which could benefit potential interested African Member States. Discussions focused on the transfer of technologies in areas of nuclear energy, health and nutrition, industrial applications, Research Reactors cyclotron, SMR, gamma irradiation and match-making events to be held in Africa and China bringing together representatives of China nuclear industries and African Government officials. It also includes a series of scientific visits and trainings to be carried out to exposed African Member States to relevant technologies.

- As a part of the series of meetings with TC Divisions, DIR-TCAF met with the Director, Office of Radiological Security, National Nuclear Security Administration (NNSA), US Department of Energy, and a representative of the US Permanent Mission to review the status of the implementation of NSSA funded projects, especially regarding the procurement of Linacs. The DIR briefed the delegation on progress made and emphasized on new funding needs for specific projects.

- In a meeting with the Ambassador of Rwanda, DIR-TCAF emphasized the importance on the upcoming 33rd AFRA TWGM which will take place in Kigali in July 2022 and sought the support of Rwanda authorities for the success of this regional event.

- Within the framework of the signed Practical Arrangements with China, DIR-TCAF had a virtual meeting with a delegation which included representative from the CNNC and the Permanent Mission of China. Discussions focused on the draft Action Plan 2022-2023 developed to enhance cooperation between China and Africa through the organization of match making events to enable interested African Member States to acquire nuclear technologies and knowledge transfer. The meeting agreed to organize the first event in July 2022 back-to-back with the 33rd AFRA TWGM.

- Dir-TCAF chaired a virtual meeting under Rays of Hope Initiative participated by IAEA directors (NAHU, PACT, and NSRW) and their respective Division staff with a delegation from Ghana led by the Minister of Health. The meeting discussed among others, Ghana's human resource and equipment needs in radiation oncology for the expansion of radiotherapy services, including the need to mobilize resources to complement TC and Government funds to address those needs.

- DIR-TCAF met with the AFRA Chair and Chairs of AFRA Committees to review/discuss progress made regarding the respective Committees' activities. He informed the meeting about the AFRA High Level Policy Meeting which had been

postponed to early December 2022 following consultations with the host country. The Committees' Chairs shared their actions related to the development of the AFRA Strategy for HRD and AFRA Fund contributions including the preparations for their respective Committees' meetings held in Vienna in late May in conjunction with the AFRA Chair meetings with donors and partners.

- DIR-TCAF participated in a session of the Task Force meeting which was held on Curriculum for International Master of Science in Nutrition with Nuclear and Isotopic Techniques to develop the first harmonised curriculum for master's in nutrition with the focus on nuclear techniques. He provided comments on the importance of this master's programme for Africa. The curriculum outline for master's in science in Applied Health Nutrition and Nuclear Techniques was developed. Morocco will lead the development of its content for francophone and Ghana for anglophone countries. A stakeholders meeting is planned for the end of October to review and endorse the completed curriculum.

- DIR-TCAF contributed virtually to the panel session entitled "Gender balance in the nuclear field" which was organized within the framework of the 29th WiN Global Annual Conference in Japan. He presented an overview of the efforts of the IAEA and the Division for Africa to empower women and the vision for the Division by 2025 to enhance gender equity. After the presentations made by the panelists, he participated in the Q&A session and provided feedback on questions from the audience especially focusing on the needs of the young females to achieve their objectives and how they can overcome the obstacles.

- In the margins of AFRA Committees' first annual meetings held in Vienna, DIR-TCAF and AFRA Chair held a series of meetings with representatives of donor and partner countries including USA, EU, Japan, France, Belgium, China, Argentina, Brazil India, Pakistan. The Chair expressed AFRA's gratitude for the continued support to the AFRA Programme and highlighted AFRA's priority areas for which donors and partners could contribute either in-kind or financially.

- On Thursday 02 June 2022, DIR-TCAF participated in a Women in Nuclear (WiN) virtual event entitled "Women in Nuclear (WiN) in Africa: Networking, vision to enhance gender equity." He delivered the opening statement with remarks also made by the WiN Global Liaison Officer to the IAEA and the A/President of WiN Africa. This meeting aimed to acknowledge efforts made to establish new WiN chapters in Africa and to enable the national Presidents to share their experiences with new Member States in view of the establishment of their national chapters.

Impressum

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