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Foreword by the Director – Division for Africa



The third quarter of 2021 was a very active period for the Division for Africa. Despite the ongoing travel restrictions, the Division continued to deliver the TC programme, engage actively with stakeholders and

partners, organize several events, and finalize project designs for the TC cycle 2022-2023, among others.

A number of major events also took place during the quarter. The Division for Africa organized the NUTEC Round Table for Africa, the 32nd Meeting of AFRA Representatives and a side event at the 65th session of the IAEA General Conference. Project designs developed for the next TC Cycle 2022-2023 were completed for submission to the TACC to be approved by the IAEA Board of Governors in November.

In terms of implementation of the ongoing TC programme, the level of absorption of funds is approximately 71% at the end of September 2021. We look forward to working together with national authorities towards achieving higher implementation rate of the allocated funds by year-end, while at the same time, ensuring the quality of delivered results.

As we embark on the last quarter of 2021, I look forward to a successful completion of the year and encourage National Liaison Officers, AFRA National Coordinators

and Project Counterparts and all stakeholders to work closely with the Division for Africa to achieve our common objectives, ensure the timely submission of applications for fellowship training and meet planned activities for the new TC programme cycle.

I take this opportunity to thank you all for your continued efficient and engaged collaboration.

Shaukat Abdulrazak, Director, Division for Africa

Web Story: Nuclear Techniques to Address Plastic Pollution in Africa

Ministers from six African Member States, as well as representatives of the World Bank, United Nations Environment Programme (UNEP), and the Global Plastic Action Partnership (GPAP) convened at the virtual roundtable on Nuclear TEChnology for Controlling Plastic Pollution (NUTEC Plastics) held on 2 September. This was the third in a series of regional roundtables organized by the IAEA to address the global challenge of plastic pollution using nuclear techniques. The Agency is pioneering NUTEC Plastics to assist countries in integrating nuclear and isotopic techniques alongside conventional techniques to address plastic pollution.

The roundtable brought together over 400 participants from 46 African Member States, including Ministers of Environment from Djibouti, Egypt, Ghana, Kenya, Nigeria and Senegal, and representatives from the Regional Office for Africa of the United Nations

Environment Programme (UNEP) and the United Nations Economic Commission for Africa (UNECA).

The Ministerial segment of the event was moderated by IAEA Director General Rafael Mariano Grossi, who pointed out that important initiatives and policies have been put in place in many countries to start looking at the issue of plastic pollution and providing solutions. “The IAEA is bringing to the table the contribution of nuclear sciences, technologies and applications, which is very important,” he said.



Over 400 participants from 46 countries in Africa attended the virtual NUTEC Plastics roundtable.

Peter Thomson, the UNSG’s Special Envoy for the Ocean, delivered a recorded keynote speech, in which he noted that the state of the ocean’s health was scientifically measurable as being in decline. “One of the greatest tasks of our time is to stop that decline and to restore the good health of the ocean,” he emphasized.

Hua Liu, IAEA Deputy Director General and Head of the IAEA’s Department of Technical Cooperation, highlighted the need for plastic materials to be produced and used in a far more sustainable way. “We must step away from the linear ‘take-make-waste’ model, and move towards a sustainable circular economy for plastics, built on the 4R principles: reduce, reuse, recycle and renew,” he said.

“Through NUTEC Plastics, the IAEA seeks synergies and partnerships with other international efforts to address plastic pollution,” he added. “It will also provide a solid platform for North-South, South-South, and triangular cooperation on marine plastic pollution and recycling.”

Shaukat Abdulrazak, TCAF Director, pointed out that the discharge of plastic into the marine environment is increasingly choking African waterways with plastic waste. “Marine species (turtles, fish, sea birds and others) are ingesting waste, causing microplastics and nanoplastics to quickly build up in food chains, portending consequences for both human health and the sustainability of marine ecosystems,” he said.

Participants at the event discussed available nuclear technologies for recycling plastic waste and for monitoring plastic pollution in the ocean. They exchanged information on existing programmes and practices (industrial, regional initiatives, and capacity building activities) and discussed opportunities for strengthening partnerships and synergies to address plastic pollution from its source to the sea.

HE Mr Kwaku Afriyie, Minister of Environment, Science, Technology and Innovation, Ghana, announced that immediate actions have been taken to demonstrate his Government’s commitment to waste management, adding that Ghana had adopted legislation to reduce the impact of plastic waste. This legislation was approved to reduce plastic in commerce and its effects on pollution in the environment. He added that nuclear technology has been recognized as one of the critical technologies that can complement existing technologies in the plastic space to manage pollution, improve recycling protocols, and protect marine resources.

HE Mr Mohammad Mahmood Abubakar, Minister of Environment, Nigeria, said that Nigeria is taking a front seat to stress their seriousness in tackling the plastic challenge. In January 2021, Nigeria officially became the fourth country in the world to join the Global Plastic Alliance partnership and is in the process of incorporating the partnership into Nigeria’s national plastic action programme. He announced that Nigeria has taken action to tackle the problem of plastic, including the development of national policies for solid waste and plastic waste management aimed at establishing at least one recycling centre in each of the 774 local government areas in the country. In addition, local communities are being encouraged to engage in modern waste management practices.



Mr. Abdulrazak provided the welcoming remarks at the NUTEC roundtable.

HE Mr Abdul Karim Sall, Minister of Environment and Sustainable Development, Senegal, highlighted his country's efforts to manage plastic waste. Senegal has adopted a new law (comes into effect in April 2022) that prohibits the production, import and distribution of plastic and encourages the management of plastic waste. The Minister proposed the establishment of a centre of excellence for nuclear techniques and applications to provide training and support in tracking and recycling plastic waste in Africa at the regional level.

HE Mr Yonis Ali Guedi, Minister of Energy in charge of Natural Resources Djibouti, showed that there are some initiatives launched at various different levels in Djibouti to deal with this environmental challenge, supported by NGOs, different associations, industrial sector and local communities to collect and recycle plastic. Measures have been taken by the Government of Djibouti to prohibit the use of non-biodegradable plastic. In 2020, the Ministry of the environment and sustainable development created a national policy for the preservation of the environment and particularly the fight against plastic waste. The Ministry of Energy as a long-term solution is encouraging biomass and established a large-scale project to produce energy from collected waste. He confirmed his government full support to the IAEA NUTEC initiative asserting that it is important to mobilize all technical institutional partners to support this initiative.

HE Mr Keriako Tobiko, Cabinet Secretary from the Ministry of Environment and Forestry, Kenya, noted that Kenya consumed more than 260,000 tons of plastic packaging each year, most of which is designed for single use, and of which less than 15 percent is recycled. Kenya has developed national policies and legislation related to sustainable waste management, plastic management, extended producer responsibility and chemical waste management. Kenya has concurred with the request by Peru and Rwanda to co-sponsor a resolution for a global agreement on plastic. He added that Member States really count on the NUTEC Plastics initiative and are keen to know more about the utility, safety, cost-effectiveness, scalability and impacts of radiation technology for recycling of plastic waste and for monitoring microplastics in the oceans. He expressed his country's willingness to enhance partnership and collaboration with the Agency in the areas of scientific research, technology transfer and development, capacity building and resource mobilization related to plastic waste, and other global environmental climate change issues.

HE Mr Aly Abou Senna, Head of the Environmental Affairs Agency of Egypt, said that one of the main impacts of the COVID-19 pandemic was the increase in the use of single use plastic bags, noting that Egypt consumes more than 14 billion plastic bags per year. In 2020, he said, "Egypt adopted the Waste Management Law, to promote scientific research, technological development and innovation that enable the effective waste management including plastic pollution. Furthermore, the national solid waste strategy has been adopted and implemented. The first strategy for single use plastic minimization has been finalized, approved, and is going to be implemented."

Ms Juliette Biao Koudenoukpo, Director and Regional Representative, UNEP Regional Office for Africa, told the participants that between 60% and 80% of all marine litter is plastic, and that 13 million metric tons of plastic end up in the oceans every year. She emphasized that plastic pollution costs US\$ 13 billion in economic damage every year, and, if nothing changes by 2025, the ocean could contain one kilo of plastic for every three kilos of fish. "Potential waste accumulation in Africa

presents a significant risk to human health, the environment and economy. In response to the environmental threat posed by plastic bags, UNEP focuses on real actions such as advocacy, awareness raising issue, enhancing the interface between policy and science, building global partnerships and alliances, and undertaking large scale initiative on singularity in some of the African countries,” she said. Ms Koudenoukpo added that establishment of the African marine waste network is a critical step in facilitating collaboration and the development of regional and national action plans to tackle the marine pollution challenge.

Mr Jean Paul Adam, Director of Technology, Climate Change and Natural Resource Management Division, UN Economic Commission for Africa (UNECA), informed participants that UNECA has commissioned a report on unleashing the potential of the private sector in driving green growth and job creation. The report is aimed at facilitating the adoption of strategies that empower the private sector, small and medium enterprises to embrace sustainable value chains, reduce waste, including that associated with plastic, and create recycling business opportunities.

Nader Hajizadeh, PO, TCAF

32nd Meeting of AFRA Representatives

The 32nd Meeting of AFRA Representatives was convened on 9th September in advance of the 65th IAEA General Conference and was attended by more than 124 high-level delegates of AFRA State Parties, 88 virtually and 36 in-person. The meeting participants included 24 Ambassadors from African Permanent Missions to the IAEA, and they were joined by a delegate of the United States who participated as an observer. The attendees endorsed the 2020 AFRA Annual Report, adopted the recommendation of Rwanda to host the 2022 TWGM, and the appointment of new members of AFRA’s three management committees.

Opening the meeting, IAEA Director General Rafael Mariano Grossi cited the great suffering and hardship

that the COVID-19 pandemic has caused worldwide. He highlighted IAEA’s assistance to 129 countries around the world, 44 of which were in Africa. “This experience, as part of the global pandemic response effort, reminds us of the value of international cooperation”, said the Director General, advocating for enhanced collaboration between the IAEA and AFRA States Parties.



Director General Grossi providing opening remarks at the Meeting of AFRA Representatives.

Hua Liu, IAEA Deputy Director General and Head of the Department of Technical Cooperation, emphasized the need for Africa to establish and manage its own nuclear technology centres for training and development. Noting the availability of competent professionals and many high-quality institutions in Africa in the fields of human health, food and agriculture, industrial applications and more, he encouraged AFRA State Parties to identify more training centres that could be utilized to address the needs of the continent, which is one of the strategic goals of the Agreement.

Najat Mokhtar, IAEA Deputy Director General and Head of the Department of Nuclear Sciences and Applications, highlighted the value of the AFRA agreement. “Over several years, I have seen the significant contribution of AFRA to the well-being of millions of Africans through science and technology,” she said.

Mr. Abdulrazak also noted the importance of the AFRA agreement in driving forward concrete action on regional priorities.



DDG-TC speaking at the Meeting of AFRA Representatives

He pointed out that AFRA submitted 18 regional project proposals for the 2022-23 TC Cycle, each addressing high priority areas. He emphasized that the AFRA State Parties would play an important role in improving the quality of TC programme implementation through enhanced monitoring towards clear outcomes at both the national and regional levels.



DG Rafael Mariano Grossi with the attendees of the Meeting of AFRA Representatives

At the meeting, Benin’s term as AFRA Chair concluded and Niger’s tenure began. It was agreed that Rwanda would take over the AFRA Chair in September 2022.

Oscar Meless, PMO, TCAF

Participation in cancer-related fora and update on partnerships in human health

The Division for Africa was represented in various regional and international fora related to human health

during the third quarter of 2021, with specific focus on cancer and discussions for identifying potential partnerships.

Mr. Abdulrazak delivered a statement at the **World Health Organization (WHO) Regional Committee for Africa** in its August 2021 meeting. He highlighted the Agency’s partnership with WHO in diagnosis, treatment, and improvement of access to nuclear medicine, radiotherapy and services for women’s cancers. His statement emphasized the IAEA’s support to African Member States to mitigate the effect of the COVID-19 pandemic as well as the launch of the Zoonotic Disease Integrated Action (ZODIAC) to strengthen global preparedness for future pandemics.

The IAEA together with Oak Ridge Laboratory co-organized a discussion on Nonproliferation and Peaceful Uses in Africa at the **Annual Meeting of the Institute of Nuclear Materials Management (INMM)/European Safeguards Research and Development Association (ESARDA)** held 23 August – 1 September. The panel discussion focused on the peaceful uses of nuclear techniques in relation to cancer. It included a component on women’s empowerment. The successful female health professionals participating in the event shared their stories to inspire others. Director Abdulrazak joined representatives from African regulatory bodies as a panelist. He talked about the need for highly skilled professionals in the areas of nuclear technology and shared the success story of the first group of radiopharmacists who graduated this year in Morocco (see story below).

Discussions between UNAIDS and IAEA took place on the operationalization of the MoU on cooperation in comprehensive cervical cancer control. The first country that has requested support under this partnership is Kenya. The focal points from the respective organizations have been nominated and a meeting with the Kenyan counterpart is scheduled to take place in October to discuss and agree on the action plan.

Discussions with the Africa Centers for Disease Control and Prevention (Africa CDC) took place at senior management level and working level to consider areas of collaboration and identify specific aspects to focus on. The proposed areas agreed for collaboration are: (i) laboratory science: from basic labs to pathogen genomics work; (ii) zoonotic diseases to build on the

ZODIAC initiative; (iii) non communicable diseases, (iv) emergency preparedness and response, and (v) capacity building for all medical staff who impact on human health around MSs national public health institutes. The next step will be to formalize an agreement.

Valentina Varbanova, PMO, TCAF

Strengthening medical imaging in Africa through regional projects discussed in a meeting between NA and WHO

Streamlining resources and improving the effectiveness of international and regional support to African Member States in the field of medical imaging was the main objective of a virtual meeting organized by the IAEA TC Division for Africa on 8 July 2021 with key partners in medical imaging in the Africa region.

In addition to the IAEA technical officers from the Human Health Division and the NSRW Radiation Protection of Patients Unit, the meeting gathered representatives from WHO, Federation of African Medical Physics Organizations (FAMPO), Africa-Wide Campaign on Radiation Safety (AfroSafe), European Society of Radiology (ESR) and AFRA project scientific consultants to explore opportunities for synergies between WHO and IAEA projects/activities in Africa, together with regional partners and professional organizations.

Several technical cooperation projects, including RAF9064, ‘Improving the Capabilities of Member States in Radiation Protection of Patients (AFRA) 2020-2023’, RAF6053, ‘Enhancing Capacity Building of Medical Physicists to Improve Safety and Effectiveness of Medical Imaging (AFRA) 2018-2021’ and a new AFRA regional project for the period 2022-2023 on ‘Strengthening the Capacities for Radiopharmacy, Medical Physics and Radiology for Expansion and Sustainability of Medical Imaging Services — Phase II (AFRA)’ have been designed to strengthen medical imaging services in Africa. These projects will be complemented by WHO when they launch a new project

to conduct large surveys on radiology services and practices in Africa in English, French and Portuguese. Participants discussed ways and means to improve communication and coordinated actions for more effective partnership under the framework of these projects.



Presentation during the virtual meeting on strengthening medical imaging in Africa

A key area identified for future collaboration was the development of the AFRA strategy for enhancing capabilities and strengthening sustainability for radiology services in Africa. This is one of the expected outputs of the upcoming AFRA regional project for 2022-2025.

Imen Bentouhami, PMO, TCAF

IAEA Supports Improved Aquifer Management in Climate Change Affected Namibia (success story)

The IAEA, Namibia’s Ministry of Agriculture, Water and Land Reform, and Germany’s Institute of Geosciences and Resources are collaborating to investigate Namibia’s water resources to protect and ensure sufficient water supplies all year round. The project will use isotope hydrology techniques to monitor groundwater resources and to assess the impact of climate change and variability in water from major aquifers in the southwestern part of the country.

“Using isotopes to assess our groundwater resources is of extreme importance to us for maintaining reliable sources of water throughout the country,” said Anna Kaupuko David, a hydrogeologist at Namibia’s Ministry

of Agriculture, Water and Land Reform. Faced with the potential of devastating droughts in her country, Kaupuko David wants to use isotopic techniques to assess if the country's current plans are sufficient. "If we suffer from a drought, the Windhoek aquifer becomes our emergency water supply for the city and can last at least three years. However, it's unclear how using the aquifer in this way would impact its future and we've been trying to use surface water from our dams to recharge it for times of drought. But with a growing population, it's never enough," she said.



Namibia is the driest African country south of the Sahara Desert. Sandwiched between the Namib and Kalahari deserts with only five permanent rivers, Namibia is prone to droughts and suffers from limited freshwater resources.

Isotope hydrology techniques are a well-established tool for the assessment of groundwater resources and could be the problem solver for Namibia's droughts, said Ioannis Matiatos, isotope hydrologist at the IAEA. "At the IAEA, we've been closely collaborating with experts from all around the world on the use of environmental isotopes to improve the availability and sustainability of freshwater resources."

Though the COVID-19 pandemic has delayed IAEA experts from visiting Namibia as planned, cooperation has continued virtually. An online training course launched at the end of May 2021 helped participants understand how isotope hydrology can be used to accurately assess and manage groundwater. "The training session taught us how to plan our field trips and collect samples of stable isotopes, as well as considerations and equipment needed to collect good quality samples for analysis," said Kaupuko David. "We are looking forward to an upcoming fellowship in

Germany where we hope to learn more about analyzing samples and deriving actionable information from the data."

Anna Grigoryan, PMO, TCAF

PMOs' Brainstorming Meeting on the Draft TC Programme Strategy for the Contribution of Nuclear Technology to the Achievement of the SDGs

The draft TC programme strategy on the contribution of nuclear science and technology to the achievement of the SDGs was discussed at a meeting organized in the framework of the TCAF series on results-based management. The draft was prepared by the inter-divisional working group established by the Deputy Director General and led by the Director of the TC Division for Planning and Coordination (TCPC). The Division for Africa is represented in this working group by Adeline Djeutie and Oscar Meless.

The TC programme strategy is meant to provide a roadmap to ensure that the TC programme remains credible, relevant, visible, and dynamic and is calibrated to support Member States in their efforts to achieve the SDGs.

Oscar Meless, PMO, TCAF

RBM meeting on forward planning for the New TCP (2022-23)

The Division for Africa organized a meeting on forward planning for the 2022 – 2023 TC programme, within the framework of its continuous effort to raise awareness on the importance of results-based management. The relevance of this meeting cannot be overstated, as failing to plan is planning to fail.

To facilitate the timely placement of fellows, DIR-TCAF invited the PMOs and the implementation teams to consolidate the demand for fellowships by thematic and related fields of activity. He also encouraged the team to identify now, in coordination with the technical officers, the list of possible host institutions for these fellowships. The understanding of demand and supply

will improve the ability to place fellows in a timely manner and to make better use of the host institutions, which will also be able to plan. This approach will minimize, as far as possible, the over- or underutilization of the capacity of available host institutions.

Oscar Meless, PMO, TCAF

With IAEA Support, African Students Graduate from First French language Master's Programme in Radiopharmacy

Burkina Faso, Cote d'Ivoire, the Democratic Republic of Congo and Mauritius will now have certified radiopharmacists for the first time. Following two years of training through a pioneering IAEA-supported master's degree programme, the graduate radiopharmacists will help to meet the growing need for radiopharmacists in Africa.

The students were part of the first cohort of students who received their Masters in Radiopharmacy at a public ceremony hosted by the Moroccan National Centre for Energy, Nuclear Sciences and Techniques (CNESTEN) in July. Held at the Mohammed V University in Rabat, and organized in collaboration with CNESTEN, the programme is the first post-graduate curriculum in radiopharmacy in French in Africa.

The French language Master's programme evolved from an ongoing IAEA technical cooperation project launched in 2018 to enhance radiopharmacy capacities in Africa.

The curriculum includes practical exercises at CNESTEN's molecular biology laboratories; work with aseptic techniques, hot cells and cyclotrons managed by the company Cyclopharma; and exploration of the operation of both radiopharmaceutical production and radioactive waste management facilities. Students also participate in a train-the-trainers event to strengthen their ability to

support further deployment of radiopharmacy technologies in their respective countries.



Students graduate from first French-language master's Course in Radiopharmacy in Africa.

“Radiopharmaceutical science is a dynamic and growing field with continued demand for qualified professionals,” explained Melissa Denecke, Director of the IAEA Division of Physical and Chemical Sciences. “The Master's programme is empowering these graduates and will contribute to strengthening the management of cancer and other diseases on the African continent.”

“These students have a vital role to play and are accountable for establishing radiopharmacy services and supporting improved human health in their countries,” said Shaukat Abdulrazak, Director of TCAF in his statement at the graduation ceremony. He noted that the Division for Africa supported nine students in the MSc Programme in radiopharmacy in French. This is in addition to eight students currently enrolled in the MSc Programme in English (in South Africa), four of whom will graduate by end 2021. The regional project also supported the specialization of one Senegalese radiopharmacist who received his Diploma from Belgium. Two train-the-trainers' courses for hands-on training of senior radiopharmacists were also supported over the last two years. Additionally, e-learning modules have been developed and will be launched soon to support postgraduate education in radiopharmacy.

Abdulrazak added that even though many African Member States have established nuclear medicine services, they do not have established radiopharmacies.

In addition, there is a severe lack of qualified radiopharmacists (about 70 radiopharmacists are available in 11 Member States, 50 of those are available in two Member States).

Additionally, African countries need support to establish their radiopharmacy related regulations (currently four AFRA State Parties have established regulations related to radiopharmacy). The rest address radiopharmaceuticals under radiation protection regulations.

To address these issues, the IAEA assists Member States through national projects and regional AFRA projects that supporting capacity building in radiopharmacy (train-the-trainers' courses for senior radiopharmacists, establishing education programmes in radiopharmacy and supporting the upgrading of radiopharmacy facilities in Africa according to international standards).

Jean Eric Granger, Côte d'Ivoire, explained his motivation for pursuing the degree. "After seeing the increasing incidence of cancer in my country, I decided to pursue training and accreditation in radiopharmacy, he said. "My next step is to return to the Institute of Nuclear Medicine in my country to support its inauguration and to begin working toward the well-being of the Ivorian people. I would like to continue my studies and obtain a PhD in radiopharmacy, eventually supporting the future generations of radiopharmacists in my country."

Kiswendsida Victor Gansonre, Burkina Faso, highlighted the importance of ensuring that radiopharmaceuticals are developed, manufactured, and controlled in line with international standards. "Radiopharmacy helps nuclear medicine to achieve high standards and concrete results by providing specific, safe, and effective radiopharmaceutical drugs," he said.

Nader Hajizadeh, PO, TCAF

10th Postgraduate Education Course (PGEC) on Radiation Protection and Safety of Radiation Sources for English-Speaking Countries opens

The PGEC is a comprehensive training programme that targets young professionals at graduate level or equivalent and helps them build a sound basis in radiation protection and the safety of radiation sources.

The 10th edition of this programme, hosted by the School of Nuclear and Allied Sciences of Ghana Atomic Energy Commission (GAEC) in Accra, opened on Monday 13 September in a virtual meeting.

Prof B.J. Nyarko, Director General of Ghana Atomic Energy Commission, gave the welcome remarks, and the opening statement was delivered by Prof. Yaw Serfor-Armah, PGEC Director and Dean of the Graduate School of Nuclear and Allied Sciences.

Director Abdulrazak, in his opening statement, expressed the IAEA's appreciation to the School of Nuclear and Allied Sciences (SNAS) for hosting the 10th edition of the PGEC. "Through your continued collaboration, this programme has successfully trained a new generation of radiation protection officers in Africa," he said. "Building Member States' capacities through capacity building to enhance the radiation safety infrastructure in Africa is one of the most important strategic goals set by the Division for Africa".

Abdulrazak said that almost 20% of the TCAF budget has been allocated to safety in the 2020-2021 TC programme, third among the regional priorities after food and agriculture and human health. The same percentage has been considered in the design and formulation of the 2022-2023 TC programme cycle.

Radiation safety is one of the highest priorities in the Regional Programme Framework (2019-2023) of the Division for Africa and the high percentage of African Member States with good progress on radiation safety is one of the success criteria that will be used to measure success under the TCAF strategy. Abdulrazak

stressed that without an adequately and effectively established safety infrastructure in Member States, the IAEA will not be able to help them to benefit fully from the peaceful uses of nuclear science and technology. He noted that today at least one third of African Member States have an adequate national safety infrastructure in place. However, 16 Member States do not have any radiation safety infrastructure.

Abdulrazak added that IAEA works closely with its partners and African Member States to build their capacities to comply with the IAEA safety and security standards. The PGEC is one of several activities organized by the IAEA to enhance relevant Member State capacities.

Since 2005, the IAEA has organized 19 PGEC training courses in both English and French. Angola and Mozambique (Portuguese-speaking) participate in the PGEC National Training course in Brazil. Since 2005, 534 candidates have participated in the PGEC with 60% to 40% gender representation. The knowledge and skills acquired have helped Member States to address specific radiation protection and safety issues. Today, some 70% of trained PGEC participants are working in national regulatory authorities.

Finally, Abdulrazak noted that despite these efforts and increasing compliance with IAEA safety standards in a few countries, the status of radiation safety and security in Africa should be further improved. Trainee participation in the new PGEC will complement IAEA's continued assistance through expert missions, staff training, workshops/meetings and policy advice to build national capacities to develop and promulgate nuclear law, establish a viable independent regulatory authority, and develop regulations for the delivery of technical services.

Nader Hajizadeh, PO, TCAF

Group Fellowship Training hosted by Egypt under regional project RAF5084

Egypt hosted a group fellowship training from 15 to 26 August 2021 under the framework of the regional

project RAF5084, 'Strengthening Food Contaminant Monitoring and Control Systems and Enhancing Competitiveness of Agricultural Exports using Nuclear and Isotopic Techniques'.



RAF5084- Group Fellowship Training, August 2021

Five professionals from Kenya, Malawi, Mali, Rwanda, and Uganda gained knowledge in the conformity assessment requirement of the ISO/IEC 17011:2017 standards as well as on general requirements for proficiency testing according to ISO/IEC 17043: 2010 Standard.

The training aimed to expand the scope of regional proficiency testing and reference materials for food contaminants in Africa. This will help to improve regional capabilities to produce tailored reference materials for proficiency testing and will enhance the excellence and reliability of food safety testing laboratories by 2023.

Sulafa Karar, PMO TCAF

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

144 ZODIAC National Coordinators (ZNCs) have now been nominated, and 117 countries have nominated their national laboratory (ZNL) to participate in the Agency's ZODIAC Coordinated Research Projects (R&D).

96 Member States have replied to an online questionnaire addressed to all ZNLs in the TC recipient

Member States. The questionnaires are being assessed to determine ZNL capacities to participate in the project, as well as their ZODIAC-related needs.

These needs will be addressed under ZODIAC Pillar 1 which is supported by the off-cycle, interregional TC project INT5157, ‘Supporting National and Regional Capacity in Integrated Action for Control of Zoonotic Diseases’. This extrabudgetary INT project (total estimated budget: EUR 85M) has so far received financial support from Belgium, Bulgaria, Estonia, Japan, Pakistan, and Portugal.

Substantial progress has been made in the development of ZODIAC since the last TCAF Newsletter. In mid-August, regional meetings were held with the 25 Phase-1 ZNL focal persons, during which equipment packages pre-designed by the Secretariat for serology, molecular diagnostics and genome sequencing were presented and discussed.

The 25 Phase-1 ZNLs provided feedback on adjusting the equipment packages to their specific needs. This feedback was examined in detail and, whenever necessary, revised or fine-tuned in coordination with the ZNL focal persons.

By the end of August, 25 requisitions were raised for a total amount of € 2 949 455 under EBT-JPN of INT5157. Twenty requisitions have been made for serology and molecular diagnostic packages and five for genome sequencing package, for the 25 Phase-1 ZNLs recipients. This includes ten African ZNLs (Angola, Botswana, Chad, Congo, Libya, Mauritania, Mauritius, Rwanda, Senegal, Tunisia).

In the next weeks, the training for serology, molecular diagnostic and genome sequencing will be organized (supported financially by the Japanese donation) and the training material for bio-risk management will be developed in cooperation with international experts (supported financially by the Belgian donation). A train-the-trainers programme is also envisaged under INT5157. It will however require additional funding to support its implementation.

Michel Warnau, Section Head, TCAF

Meetings Attended by DIR-TCAF

1. DIR-TCAF and SHs-TCAF (together with technical colleagues from NA) participated in a virtual meeting with officials from the World Bank to review opportunities for collaboration in the water sector in the Sahel. There are potential synergies in Mauritania, Burkina Faso and Niger. The meeting recognized that the regional approach is preferred, and support provided at national level should preferably feed into the characterization of regional, shared resources. The meeting encouraged technical staff from both IAEA and World Bank to liaise with respective counterparts and bring these together as a next step.

2. DIR-TCAF gave a keynote presentation during the National Commission for Science, Technology and Innovation (NACOSTI) Multi-Sectoral Conference on STI, entitled *STI Governance, and Mainstreaming: Infusion in National Development Agenda in a Disrupted World*.

The conference was convened by NACOSTI in collaboration with key partners within the Science, Technology and Innovation (STI) ecosystem. It was held both virtually and physically with the aim of convening industry leaders and principal industrialists, STI institutions, private sector, innovators, professionals, leaders, scholars, intellectuals, scientists, and researchers to exchange and share their experiences, STI achievements and developments, R&D results, and networks on all aspects of science, technology and innovation. The conference also provided a platform for professionals, practitioners, inventors, innovators, entrepreneurs, scholars, researchers, and educators to present and discuss the most recent innovations, scientific and technological advancements, and STI trends and trajectories, in a world disrupted by the pandemic.

3. DIR-TCAF and SH-TCAF1 visited the new IAEA laboratories in Seibersdorf. During the visit, DIR-TCAF met with the Laboratory Coordinator and discussed opportunities to host African candidates for fellowships trainings. The tour included a visit and meetings with the Heads of the Insect Pest Control Laboratory, Food and

Environmental Protection Laboratory, and the Soil and Water Management and Crop Nutrition Laboratory. This visit provided first-hand information on the laboratories' capacities to carry out research and to support fellowship training (practical and postgraduate).

4. DIR-TCAF chaired a preparatory follow-up meeting of the NUTEC Africa Roundtable with the participation of DIR-NAPC, a representative of the DIR-NAEL, the TO assigned to the NUTEC regional project, NA Programme Coordinator, and a consultant in the DDG-NA office. DIR-TCAF informed the attendees of the confirmed participation of invited Ministers of Environment from some African Member States.

5. DIR-TCAF together with DDG-NA and DIR-NAHU, participated in an AFCONE-IAEA-WHO-AORTIC virtual event, *Efficient Role of Safe Nuclear Technology in Fighting Cancer: Solutions to Africa's Challenges*, held on 8 September. During his presentation, entitled *IAEA and AFRA projects in Africa and Achievements*, DIR-TCAF highlighted TC achievements and ongoing assistance to Member States in the fight against cancer through capacity building and delivery of equipment. He emphasized IAEA support to African Member States for resource mobilization to establish or expand radiotherapy centres.

Other Meetings

6. Under project RAF6057 on clinical nuclear medicine, the PMO made a presentation, *Nuclear Medicine Leadership Competency Framework – Systems & Innovative Thinking* as part of a virtual Task Force on Nuclear Medicine Leadership and Management. The

task force is preparing material for a regional training course scheduled for November 2021.

7. The PMO of Zambia organized a virtual meeting with project counterparts following the submission of Zambia's Self-Evaluation Report/NPP in July 2021. Technical Officers from different sections including the Nuclear Infrastructure Development Section, Research Reactor Infrastructure Section and Research Reactor Safety Section participated in the discussion of Zambia's priorities on its plan to develop its nuclear power programme and establish a new research reactor. Zambia has requested an IAEA INIR mission in 2022 and the TOs from Nuclear Infrastructure Development Section will start working with Zambia to prepare for the mission. The meeting also encouraged Zambia to share the Self-Evaluation Report for research reactors with the IAEA.

8. SH-TCAF1 made a presentation to the TC Partnership Review Committee (PRC) on the draft Practical Arrangements between the Pakistan Atomic Energy Commission and IAEA on cooperation in the peaceful use of nuclear technology. This PA was jointly prepared by TCAF and TCAP. The PRC recommended that this partnership is worth pursuing, and it was subsequently signed during the 65th IAEA General Conference.

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