

Commission on Science and Technology for Sustainable Development in the South (COMSATS)

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# From Editors' Desk

The developing world is faced with new realizations and challenges owing to COVID-19 pandemic that has necessitated urgently upgrading systems, innovating production and processes, and modernizing governance and management. The much-needed shift to digital economy and mainstreaming of contactless practices in public settings are coming to countries proportionate to their existing levels of development, dynamism of policies, approach to ST&I and R&D, and civic sense and education.

Developing countries are at varying levels with regard to the afore-mentioned variables, which is also reflected in their Pandemic preparedness and response. With the Pandemic having been around for over a year and a half, where initial fear and panic has subsided, new concerns relating to the evolution of the virus and overall adaptability to this new normal are also arising. Fortunately, development of a number of vaccines has come to rescue of masses and would help push forward on the development fronts to achieve earlier momentums.

In addition to 'Science Diplomacy', the world is now becoming familiar with terms such as 'COVID-19 Diplomacy' and 'Vaccine Diplomacy' indicating the need for unified responses to big global challenges, which include Climate Change. We see how development of vaccines without widespread distribution will not be enough to deal with the Pandemic and a single country in a region getting ahead in RETs will not mitigate climate change, combined response is and will remain the need of the hour for foreseeable future. COMSATS' Member States and Centres of Excellence have been persevering amidst the challenges and some of their recent work as well as COMSATS Secretariat's support for the same have been highlighted in this issue.

An especially remarkable development during the reporting period of this issue has been inauguration of COMSATS Joint Centre for Industrial Biotechnology (CCIB), Tianjin, China (page 02). We were honored to have the Federal Minister for Science and Technology, Ch. Fawad Hussain; Deputy Mayor, Tianjin Municipal People's Government, Mr. Weidong Wang; and Deputy Director-General, Department of International Cooperation, Ministry of Science and Technology, China, Mr. Linhao Chen, at the ceremony held in Pakistan and China concurrently thanks to virtual connections. I felicitate COMSATS and Tianjin Institute of Industrial Biotechnology (TIB) on this initiative.

COMSATS Secretariat welcomes ideas and feedback aiding pursuit of its mission of S&T-led development and the contents of this issue.

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# HIGHLIGHTS FROM COMSATS SECRETARIAT

#### Inauguration of COMSATS Joint Centre for Industrial Biotechnology

COMSATS Joint Centre for Industrial Biotechnology (CCIB) was inaugurated on 14th April 2021, in Tianjin, China. The Centre has been established in collaboration with COMSATS Centre of Excellence in China, the Tianjin Institute of Industrial Biotechnology (TIB). Mr. Weidong Wang, Deputy Mayor, Tianjin Municipal People's Government; Mr. Linhao Chen, Deputy Director-General, Department of International Cooperation, Ministry of Science and Technology, China; and Prof. Dr. Yanhe Ma, Director General TIB, inaugurated the Centre.

The inauguration ceremony was physically attended by representatives from Chinese Ministry of Science and Technology (MoST), Tianjin Government, Chinese Academy of Sciences (CAS), the Alliance of International Science Organizations (ANSO), and CAS-TWAS Centre of Excellence for Biotechnology, among others. In addition, representatives of COMSATS' Focal Ministries, Centres of Excellence, and COMSATS Secretariat virtually attended the ceremony.

At the inaugural, the establishment of the Centre was formalized through signing of an Agreement by Dr. Arshad Mahmood, Executive Director COMSATS, and Prof. Dr. Yanhe Ma, Director General TIB. Housed at TIB, the CCIB will serve as a comprehensive, integrated, open and shared platform to promote industrial biotechnology cooperation and bio-industry development among COMSATS Member States. The Joint Centre would, inter alia, facilitate collaborative R&D activities, capacity building (through training courses and academic exchange activities), S&T consultancy services, and technology transfer among



COMSATS Member States.

In his inaugural remarks, H.E. Chaudhry Fawad Hussain, Federal Minister for S&T, Government of Pakistan, and Chairperson COMSATS Consultative Committee, thanked and acknowledged the financial support and patronage of the Chinese Ministry of Science and Technology (MoST), and the Tianjin Government for the establishment of CCIB under the framework of National Center of Technology Innovation for Synthetic Biology (NC SynBio). He also appreciated the role being played by COMSATS in facilitating collaborations among the developing countries in S&T domains. He noted that scientific prowess in industrial biotechnology will go a long way in improving agriculture, healthcare, environment, and other areas of importance, and humanity will be able to fight the challenges of hunger, poverty, diseases and environmental degradation in an effective manner. Speaking on the occasion, Mr. Linhao Chen, Deputy Director-General, Chinese Ministry of Science and Technology, noted that R&D collaboration in industrial biotechnology will bring great benefits to COMSATS' Member States.

In his remarks, Dr. Mahmood, noted that the Joint Centre will have farreaching benefits at both regional and global scale by potentially contributing to the solutions to some of the grand challenges of present times. Prof. Ma hoped that CCIB will help strengthen TIB's ongoing collaboration with other S&T centres in COMSATS' Member States.

During the meeting, the appointed Director of CCIB, Prof. Dr. Jibin Sun, gave a brief on development plans, programs and activities of the Centre. Subsequently, a consultative meeting was held among the members of CCIB's Consultative Committee and TAC. The meeting discussed means to promoting high-level joint R&D; furthering innovative ways for capacity building; promoting technology transfer among the member countries; and building the Joint Center into a high-end think tank.

8th Session of COMSATS' Lecture Series on South-South and Triangular Cooperation features Talks from TWAS, Italy, and ISC, Belgium

#### Lecture by Prof. Dr. Romain Murenzi, Executive Director TWAS

The first talk of the eighth session of the series was delivered by Prof. Dr. Romain Murenzi, Executive Director of The World Academy of Sciences



(TWAS), Italy. The talk was entitled "Capacity building in the Global South: The Contribution of TWAS". Prof. Murenzi shared various programmes of TWAS that have been playing a vital role in the capacity-building of scientific community, helping improve research infrastructure, supporting early-career scientists, promoting and catalyzing research links, as well as rewarding scientific excellence in the developing countries.

Sharing details on individual programmes, Prof. Murenzi mentioned that "TWAS South-South PhD Fellowship Programme" offers 100 to 160 PhD fellowships each year for research at well-known institutions in the developing countries, including Brazil, China, India, Pakistan and South Africa. He informed that, since 2004, over 700 PhD awardees have graduated with the support of TWAS and its partners, and over 1700 peer-reviewed publications have been produced by TWAS PhD graduates. Another of such programme, Postdoctoral Fellowships: South-South Mechanism, he added, supports scientists from developing countries to work collaboratively with prominent scientists in another developing country.

It was learnt that 'TWAS Exchange Programme' is facilitating scientific exchanges and mobility in partnership with Deutsche Forschungsgemeinschaft (German Research Foundation, DFG), UNESCO, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), COMSATS University Islamabad, Accademia Nazionale dei Lincei, and Scuola Internazionale Superiore di Studi Avanzati (SISSA), among others.

Prof. Murenzi also informed that TWAS recognizes excellence in scientific research in the developing world through various awards, such as: TWAS – Lenovo Science Award; TWAS Awards; TWAS-Siwei Cheng Award in Economic Sciences; TWAS Medal Lectures; TWAS-C.N.R. Rao Award; TWAS-Atta-ur-Rahman Award; TWAS-Al-Kharafi Award; TWAS-Abdool Karim Award; TWAS–S.Omar Innovation for Sustainability Award; TWAS-CAS Young Scientists Award for Frontier Sciences; TWAS-Mohammad A. Hamdan Award; and TWAS Regional Awards.

It was also mentioned that TWAS Young Affiliates Network (TYAN) initiative, started in 2007, is promoting scientific cooperation through research on emerging diseases, climate change, food and water safety, preservation and utilization of biodiversity, etc. Concluding his lecture, Prof. Murenzi stated that present times require effective partnerships between scientists, policymakers and diplomats to help deal with variable challenges. In this connection, TWAS in collaboration with the American Association for the Advancement of Science (AAAS) is leading a programme that includes lectures, workshops, courses and prizes.

#### Lecture by Prof. Dr. M. H. A. Hassan, President of TWAS Council

The second lecture under the session was delivered by Prof. Dr. M. H. A. Hassan, President of Council, The World Academy of Sciences (TWAS), Italy. Shedding light on the concept of Science Diplomacy during his lecture entitled 'Science Diplomacy and Scientific Migration', Prof. Hassan stated that three trends helped shape this concept:

- passion of scientists to collaborate with the best in their field;
- use of scientific tools to improve relations between countries having politically strained relations; and
- need for global partnership in STI to achieve SDGs.

He was of the view that Science Diplomacy and science, technology and innovation (ST&I) are essential for the achievement of Sustainable Development Goals (SDGs) by 2030. He deemed Paris Agreement on Climate Change (2016) a great example of science diplomacy where 195 countries pledged to limit global warming to two degrees Celsius. He also hailed Mission Innovation (MI), a global initiative of 24 countries and the European Commission, committed to double public investment in clean energy R&D.

'TWAS-AAAS Science Diplomacy courses' were highlighted as an effective programme aimed at bringing together scientific, policy making and diplomatic communities to jointly address critical transboundary issues and publish case studies.

Detailing on 'International Scientific Migration', Prof. Murenzi informed that according to UNHCR, about 80 million people were displaced by 2019; a significant fraction of which consists of scientists, teachers, engineers, medical doctors, and students.



It was informed that to help save the refugee scientists, a Workshop was organized by TWAS, National Institute of Oceanography and Applied Geophysics (OGS), and Euro-Mediterranean University (EMUNI), in Trieste, during March 2017. Fifty participants, including policymakers, science leaders, diplomats, refugee administrators, and refugee scientists from 20 countries in Europe and the Middle East/North Africa region participated in the workshop. Challenges and opportunities being faced by refugee scientists were discussed during the workshop and some useful recommendations were made.

'Links for @risk scientists' was mentioned as an another programme launched by European Commission to help refugee scientists find suitable jobs, match-making of talented refugee scientists with EU institutions, and providing competitive grants.

#### Lecture by Mr. Declan Kirrane, Director, Intelligence in Science (ISC)

Delivered by Mr. Declan Kirrane, Director, Intelligence in Science (ISC), Belgium, the third lecture was on "The Contribution of the EU Horizon Europe and Neighborhood, International Development and Cooperation Instrument, NDICI, to Science Capacity Building to Support the United Nations Sustainable Development Goals, and the Potential Role for COMSATS".

It was informed by Mr. Kirrane that Horizon Europe is the main research and science programme funded by the European Union (EU) having various editions, including Horizon 2020. The programme supports EU's collaborative research activities and offer opportunities for all to participate and contribute. It was learnt that new Horizon programme will be launched in April 2021, which would also provide a platform for COMSATS' Member States to engage and collaborate with EU to help address global issues.

Mr. Kirrane also informed that ISC and other collaborators are planning to organize a series of events on the sidelines of United Nations General Assembly in September 2021. The objective of the afore-mentioned events would be to raise awareness of the role and contribution of science to SDGs. He also proposed cooperation with COMSATS in organizing one-day activities with participation of Ministers from COMSATS' Member States.

Neighborhood, Development and International Cooperation Instrument (NDICI) was mentioned as another programme of the European Union, which was proposed by the European Commission on 14 June 2018, as part of a dedicated communication titled 'a modern budget for a union that protects, empowers and defends'. NDICI is EU's main financial tool against poverty and for promoting sustainable development, prosperity, peace and stability. The programme though not a science-led programme holds science central to achieving its objectives in the areas of education, agri-food, economic development, and governance. Mr. Kirrane urged COMSATS' Member States to engage in priority setting process which is handled by EU delegations in each of the eligible nations.

Furthermore, it was learnt that an annual flagship Research and Innovation event of EU - European Research and Innovation Days (EU R&I) – is scheduled to be held on 23rd and 24th June 2021. The event brings together policymakers, researchers, entrepreneurs and the public to debate and shape the future of research and innovation in Europe and beyond. Mr. Kirrane proposed organizing "COMSATS Information Day" to help explore synergies with Horizon Europe as well as other organizations participating in the event.

#### Observance of International Women's Day 2021

This year the International women's day was celebrated under the theme: "Women in Leadership: Achieving an Equal Future in a COVID-19 World,"





that aimed to acknowledge the tremendous efforts by women and girls around the world in shaping a better future and recovery from the COVID-19 pandemic and highlight the gaps that remain.

To observe the day, COMSATS Secretariat organized a webinar on "International Women Day: Building Inclusive Science Environment in the South", on 8th March 2021. The event aimed to celebrate women's achievements and success in Science, Technology and Engineering and to highlight challenges limiting women's participation in science-led socio economic development. Eminent women speakers from the Global South delivered their talks reflecting on their journey in STEM related careers.

Amb. (R) Fauzia Nasreen, Advisor for SDGs at COMSATS chaired the session. In her opening remarks, she emphasized on the equal participation of men and women in scientific research that drives innovation and strengthens economy. She emphasized that given the challenges confronting the world, Global South, in particular, gender inequalities are detrimental to S&T-led development. She emphasized that inclusive environment for promotion of STEM education and careers is equally important for building the leadership in women scientists.

Dr. Assemgul Kalikumarovna Sadvakassova, Deputy Dean, Al-Farabi Kazakh National University, showed how women can continue their work as scientists along with taking care of



their families. She considered balance between professional, and domestic lives absolutely necessary. This is how, she added, she herself was able to pursue her career in Science.

Eng. Abeer Arafat, Assistant to the President for Special Projects, Royal Scientific Society (RSS), Jordan, in her presentation introduced another area of scientific knowledge and research that pertains to applying scientific knowledge to museums. She stated that women are playing equally important role in preserving and conserving historical artifices and intellectual wealth in their country. She also acknowledged the leadership and guidance of Princess Sumaya in achieving success as a member of RSS team. Ms. Abeer highlighted how she pushed herself to achieve excellence during her involvement in various projects and as a senior officer at an international organization.

In her inspiring talk on the occasion, Prof. Mariangela Hungria, Researcher, Embrapa Soja, highlighted the way of





living in older days in Brazil that was quite difficult for her as she strived to pursue her career as a scientist. She informed that she had strived to maintain work-life balance throughout her life while focusing both on her career and personal life.

Prof. Samia Charfi, Director General of Scientific Research in the Ministry of Higher Education and Scientific, Tunisia, highlighted contribution of women in science and technology in her country with 55% researchers and 70% postdocs. She also shared experience of facing sensitive issues related to gender equality and her perseverance through them that helped in building her career.

Dr. Sohail Chughtai – a consultant orthopedic surgeon based in UK – highlighted that the perceptions are changing in modern era and the role of women in Science and Technology is now considered equally important. He was of the view that keeping women away from the jobs and demanding fields is still dominant societal behavior especially in remote areas.





# SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

#### ICCBS-Pakistan, CUI-Pakistan and ITI-Sri Lanka Sign Bilateral Agreements

Three of COMSATS' Centres of Excellence have signed agreements for collaboration in a number of fields of science and technology. The formal signing ceremony was held in the presence of Prime Ministers of Pakistan and Sri Lanka, during the former's visit to Colombo, Sri Lanka.

The bilateral agreements were signed by the Industrial Technology Institute (ITI), Sri Lanka, the International Center for Chemical and Biological Sciences (ICCBS), Pakistan, and COMSATS University Islamabad (CUI), Pakistan, on 23rd February 2021. ITI was represented by its Director General, Dr. Radhika Samarasekera, while Pakistan's High Commissioner to Sri Lanka, Maj. Gen. (R) Muhammad Saad Khattak, signed agreements on behalf of CUI and ICCBS.

The Memorandum of Understanding (MoU) signed between ITI-Sri Lanka and ICCBS-Pakistan provides platform for cooperation in areas of natural products/medicinal plant chemistry, food chemistry, biotechnology, nanotechnology, tropical disease research, and analytical services. Under the MoU, the parties would undertake academic and research cooperation in scholarships, fellowships, hands-on trainings on sophisticated equipment, joint supervision of students, conducting bi-institutional workshops, exchange of research scientists and faculty members, exchange of academic materials and publications, and settingup of analytical service laboratories.

The Intent of Cooperation (IoC) signed between ITI-Sri Lanka and CUI-Pakistan would found basis for cooperation in education, research and capacity-building through joint training programs, conferences and seminars; joint academic and research activities; exchange of researchers, staff and faculty members; short-term and longterm fellowships; implementation of short-term training courses; publishing joint research journals; and sharing of scientific resources, among others.

Another COMSATS' Centre, Tianjin Institute of Industrial Biotechnology (TIB), China, has signed agreement with COMSATS for the establishment of COMSATS Joint Centre for Industrial Biotechnology (CCIB) housed at National Technology Innovation Center of Synthetic Biology (NC SynBio) of TIB (details on page 2).



#### CUI-Pakistan Inks Accords for R&D in Cutting-edge Technologies

COMSATS University Islamabad (CUI), Pakistan, signed a Memorandum of Understanding (MoU) with a Chinese enterprise, Heroboss Technology to work collaboratively for product oriented research projects in areas of cutting-edge technologies. Furthermore, CUI will host an LED Research Center jointly developed by the Chinese enterprise, and also contribute towards the capacitybuilding of human resource at Heroboss Technology.

The modalities of cooperation between the two sides were discussed earlier during the visit of a seven-member delegation from Chinese state-owned enterprises.

Another cooperation agreement has been signed by CUI, Pakistan, with the National Electronics Complex of Pakistan (NECOP). The MoU will promote collaboration between the two organizations for Research and Development in the areas of Computer Sciences, Electronics, Computer and Mechanical Engineering by granting access to NECOP laboratories and facilities to CUI Researchers. The two sides have also agreed to hold joint research seminars, workshops and conferences in the subjects of mutual interest.

#### CUI Wins Erasmus + SAFE-RH Project

Wah Campus of CUI, Pakistan, along with four partner universities from across the globe has won a project SAFE-RH under Erasmus + 2020 Program of the EU. The project is aimed at developing Remote Health Monitoring solutions to reduce the mortality rate of women and children in rural areas of Pakistan. The system is also aimed at improving monitoring, communications and transportation challenges within the healthcare systems.

#### CSIR-Ghana Develops Innovation Hub to Support Ghana's MAG Programme

The Council for Scientific and Industrial Research (CSIR), Ghana, is developing a Digital Agricultural Innovation Hub (DAIH) that will aid farmers and other stakeholders in agriculture to easily access the various technologies available.

DAIH hosts a set of reliable and easy-touse integrated web and mobile-based platforms aimed at sharing knowledge and assisting the agricultural sector with innovative solutions that can be adopted to the real needs of local farmers and other value chain actors.

Development of the Innovation Hub falls under the 'Modernizing Agriculture in Ghana' (MAG) programme being supported by Global Affairs Canada to support Ghana's agricultural sector development.

#### CSIR-Ghana Implements USAID's PAIRED Project in Ghana

The Crops Research Institute of CSIR, Ghana, is leading the implementation of Partnership for Agricultural Research, Education and Development (PAIRED) project in Southern Ghana. The project is funded by USAID as a result of an Agreement between the USAID and the West and Central African Council for Agricultural Research and Development (CORAF/WECARD). It has been implemented in 12 communities across the Ashanti, Bono and Bono East regions, since the agreement was signed in January 2020.



The PAIRED project aims to improve seed quality, access to fertilizers and agrochemicals, and maize and rice production system in West Africa as well as to help implement best farming practices in the major agro-ecologies.

# TIRDO-Tanzania's Response to COVID-19

To help Tanzania's response to coronavirus pandemic, the Tanzania Industrial Research and Development Organization (TIRDO) developed an oral herbal remedy against COVID-19. COVIDOL is a pure herbal formulation containing alkaloids, terpenoids, flavonoids and essential oils with biological activity reported in scientific literature. The formulation is free from alcohol, sedatives and addictive drugs. The Organization has also indigenously produced hand sanitizers to meet national needs.

#### Project on Cleaner Production Initiated by RSS-Jordan

Water and Environment Centre of RSS, Jordan, and the University of the West of England (UWE) have initiated a project 'Integrating and Digitizing Resource Efficient Cleaner Production (RECP) in Food Industries: Towards Circular Economy in Jordan'. The project that will run for 16 months primarily aims at enhancing the development of green food industries in Jordan through promoting Resource Efficient Cleaner Production (RECP).

The key expected outcomes of the project are:

- Integrating the principles of Resource Efficient Cleaner Production (RECP) in selected dairy industries in Jordan;
- Strengthening the demand and supply services of RECP amongst dairy industries; and
- Digitizing the environmental and fiscal benefits of RECP through IoT tools and block chain technology.

The inaugural meeting of the project was held virtually and was attended by partners and officials from RSS and UWE. The project is funded by the Royal Academy of Engineering (RAE) under the Transforming Systems through Partnership (TSP) program – in collaboration with Newton Khaldi Fund and Higher Council for Science and Technology (HCST)/Industrial Research and Development Fund (IRDF).

#### RSS-Jordan Completes Project Relating to Urban Farming Systems

The Royal Scientific Society (RSS) of



Jordan in collaboration with the Harper Adams University, United Kingdom, successfully completed the project "Enhancing Food Security through Promoting Urban Farming Systems in Jordan".

The project, funded by the Royal Academy of Engineering in UK/ Frontiers of Engineering for Development program, is aimed at building systems for "Soilless Vertical Farming" in selected urban areas in Jordan and studying the ability of such systems to increase the resilience of poor urban communities to any unexpected external shocks by providing a sustainable food system model.

RSS team piloted three urban farming systems on the rooftops of different beneficiaries in some urban areas of Jordan. The project team trained beneficiaries and some local community members on the operation, maintenance and installation of such systems. The social and economic shortterm impacts of the installed urban farming systems on the beneficiaries were studied along with identification of the potential social and economic constraints and opportunities of urban



farming in the targeted areas.

#### Training on Clean Energy Management Software Conducted by RSS-Jordan

As part of MINARET Capacity Building Plan, the National Energy Research Center (NERC) of RSS, Jordan, conducted an online three-day training on "RETScreen Expert" Program that is specialized in energy projects via GoToTraining platform.

The training was conducted by NERC staff who transferred international expertise locally and regionally to more than 30 participants from 21 municipalities' staff from Jordan, Lebanon, and Tunisia.

"RETScreen Expert" is a Clean Energy Management Software system for energy efficiency, renewable energy and cogeneration project feasibility analysis as well as ongoing energy performance analysis. It empowers professionals and decision-makers to rapidly identify, assess and optimize the technical and financial viability of potential clean energy projects.

This decision intelligence software platform also allows managers to easily measure and verify the actual performance of their facilities and helps find additional energy savings/ production opportunities.

RSS/NERC is the only certified training body in Jordan, which is licensed to issue certificates on behalf of the Canadian Institute for Energy Training (CIET).

#### RSS-Jordan Conducts Seminar Under SOLE Project

National Energy Research Centre (NERC) of RSS, Jordan, in collaboration with ENI Cooperating across Borders in the Mediterranean (CBCMED) organized the Second Technical Seminar (virtual) under the SOLE Project. The project aims to enhance the capacity of public institutions to plan and implement sustainable energy policies around the Mediterranean countries.

During the seminar titled "Financing Opportunities for the Improvement of Energy Use in Public Buildings", the speakers discussed innovative public procurement strategies in social housing, ways to engage private parties in funding energy efficiency improvement in public buildings, ethical banking with a special focus on blended funding (private and public), integration of national or regional grants and public funding with private investments, and collaborative financing for energy transition.

#### Industrial Analytical Center (IAC) of ICCBS-Pakistan Receives Accreditation from PNAC

The Industrial Analytical Center (IAC) of International Center for Chemical and Biological Sciences (ICCBS), Pakistan, has received a 'certificate of accreditation' from Pakistan National Accreditation Council (PNAC), Federal Ministry of Science and Technology, Government of Pakistan.

The ISO/IEC 17043 certified IAC offers a range of professional analytical and consultancy services to more than 700 private and public sector organizations and industries in Pakistan. The Centre also provides world-class training on analytical instruments and is authorized to issue a certificate of analysis.

PNAC accredits laboratories that conduct tests in various fields of testing, including microbiological, chemical, food, construction electrical,



environmental, textiles, petrochemicals, and pharmaceuticals.

#### ITI-Sri Lanka Opens Techno Centre

The Industrial Technology Institute (ITI) of Sri Lanka has opened a Techno Centre at the Rajawasa State Trust Centre of Sri Lanka State Trading (General) Corporation under the Ministry of Trade at Colombo.

The Techno Centre showcases new products which are ready for technology diffusion and key ITI technologies already commercialized to MEs, SMEs and Large Entrepreneurs. This one-stop ITI Techno Center will also facilitate small business and SMEs obtain product technologies, develop business linkages and launch promotional activities. It will also help link enterprises with the ITI packaging laboratory and accredited testing laboratories to enhance product quality.

#### Space-Qualified Solar Panel of TÜBİTAK MAM-Turkey Passes Pre-Launch Qualification Tests

The space-qualified solar panel developed by the Photovoltaic Technologies Center of TÜBİTAK MAM Materials Institute, Turkey, has successfully passed groundlevel verification, qualification and functionality tests in compliance with international standards.

It is the first space-qualified solar panel developed in Turkey. The manufactured space-qualified solar panel have a power generation capacity of 100 watts under harsh space conditions. The know-how and manufacturing infrastructure attained with the Space-Qualified Solar Panel Development Project will allow the design and manufacture of solar panels suitable for meeting the power needs of satellites with high power-requirements.

#### TÜBİTAK-Turkey's Institute Collaborate with National Agencies to Modernize Turkey's Height System

TÜBİTAK Marmara Research Center (MAM) and TÜBİTAK National Metrology Institute (UME) of Turkey with the joint cooperation of General Directorate of Mapping, General Directorate of Mineral Research and Exploration (MTA), Turkish Petroleum Corporation (TPAO) have successfully completed the Project (TR-GRAV) for Modernization of Turkey's Height System and Improvement of Gravity Infrastructure.

The Project TR-GRAV, conducted from 2016 to 2020, was aimed at modernizing Turkey's out-dated height system with new approaches in light of scientific and technological developments and developing an infrastructure that would allow the use of country-wide geodetic gravity data to be used in other fields of earth sciences like geophysics, geology and mineral and petroleum exploration.



STATEMENT ISSUED BY THE ROYAL SCIENTIFIC SOCIETY (RSS), JORDAN



Ref: Reference Date: 14 April 2020

Statement issued by the Royal Scientific Society - Jordan

# A Call for Unified National and Global Science and Technology Responses to the COVID-19 Pandemic

The Covid-19 Pandemic is threatening the lives of vulnerable communities around the World, while its ramifications are severely impacting on the physical and mental well-being of a large part of the global population. The consequences of measures taken to slow its spread and gain valuable time for healthcare authorities to better manage the crisis have led to a crippling of economic activity and to grave financial insecurity for hundreds of millions of people.

Wealthier states are better able to provide support and to protect populations, both in terms of healthcare provision and economic security, but we must recognise that the global community should act together so as to better fight the pandemic in the medium-term.

We believe that the challenges we face now, and in the months to come, will demand responses that are novel in both design and implementation. The current policy landscape is not sufficiently robust to respond globally and to act in the interests of a global population faced with a common threat. The ongoing emergency response and future recovery planning must be underpinned by scientific and innovative action. Good science must inform and empower good policies as we respond to Covid-19.

Today, more than ever, science and technology must form the basis for appropriate crisis management, and for response and recovery planning. We wholeheartedly add our voice to calls for scientists and innovators to lead, engage and communicate as we look to them to underpin policy formulation and to inform decision-making. This is only possible through a multidisciplinary and supportively institutionalised integration of science and technology in

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the planning process, and by multilateral, cross-border and cross-sectoral co-operation, collaboration and communication between and among scientists and practitioners.

We have all been inspired by the selfless dedication of physicians, nurses, technicians, carers, engineers and others as they risk their lives daily to care for Covid-19 patients and the wider community. We must never forget the sacrifices being made today, and we must commit to building a legacy that recognises this, and that is worthy of the suffering, fear and insecurity that this crisis has wrought.

The Royal Scientific Society (RSS) is committed to a mission that has endured from its foundation in 1970: to be Jordan's science reference point, to serve the Kingdom and its people at all times and in all circumstances. We reaffirm our mission in this most challenging of periods for the Kingdom and the World. We pledge to continue our dedication to providing science advice to government, to innovating solutions to new and emerging challenges, and to expanding our outreach and cooperation regionally and globally to exchange knowledge and expertise and to make science – that unparalleled gift of human ingenuity – central to planning, development and wholistic peace-building.

We call upon national and global science practitioners and enablers to make equal engagement and evidence-based assessment, research and advice the central tenets of humanity's response to humanity's greatest challenge for a generation. We reach out to all science academies and institutions to engage with each other and with our communities. This not a challenge with a single solution. Covid- 19 has unlocked a grave and multi-dimensional humanitarian crisis that has fed on many existing deficiencies in our uneven and fearful world. As champions of science, we must defend the integrity of our human family and embrace those who suffer across borders and beyond socio-economic barriers.

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### WAYS TO PROMOTE WOMEN'S RIGHTS THROUGH UNIFIED APPROACH

by Amb. (R) Fauzia Nasreen\*

Every year on 8 March International Women's Day is celebrated to renew the global commitment to empower women and uphold their rights safeguarded in a number of conventions and covenants. In 2021 8th March is being celebrated under the shadow of the COVID-19 pandemic and very aptly the theme is "Women in Leadership: Achieving an equal future in a Covid-19 world". It reflects the realities of the current environment hugely influenced by the COVID-19 pandemic. The spirits however, have not been dampened amid hopes for a better recovery. The rapid response by the scientists and medical community has rekindled aspirations for moving beyond the COVID-19 environment building the post COVID-19 world on the pillar of international solidarity. In this women and girls are equal partners aspiring to enjoy the support of all stake holders.

In the struggle against the pandemic women and girls have been at the forefront and at the same time they have been impacted in multiple ways. Women have shouldered the responsibility as health workers, caregivers, innovators and community leaders. They have risen to the call of duty and shown exceptional dedication which has been recognized and commended worldwide. Women leaders have demonstrated exceptional leadership qualities as heads of state and governments and as professionals.

The imperative of their integration and mainstreaming has been reinforced. It presents an opportunity to explore ways to promote their rights as equal contributors to growth and development. Transformative gender equality has become critical under the current conditions now more than ever before. The 2030 Sustainable Development agenda cannot be achieved without an equitable participation of women in the entire spectrum of development; political, economic, socio-cultural, security, science and technology.

Since gender equality and the empowerment of women is the core of the Sustainable Development Goals (SDGs) almost all the goals and targets touch upon this aspect in a substantial way. Women participation and leadership is essential together with a consensual approach towards issues pertaining to the rights of women and girls in different spheres.

Unified approach that would help achieve women's rights rests on participation and decision making as well as supportive legislative or legal framework. Rationale for such a unified approach is that

- Full political participation in public life ensures that voice of women is heard on all issues affecting the lives of women.
- In order for them to play an active part in public and private sectors their capability matters immensely. Hence their health and wellbeing, solid nutrition along with quality education and skills would be necessary.
- Education matters for gender equality. We are all familiar with the close link between a girl's education and social and economic development. Societal commitment to upholding women and girls' right to education would go a long way in building their capacities.
- Women participation in economic and commercial activities has twofold benefits; first it gives financial independence to women and more importantly it boosts the overall economic growth of the state and society. Creating an enabling environment would be a step in the direction of promoting smart economy.

 Poverty eradication measures need to ensure equal access to financial and other resources of the state and society which includes agriculture productivity and entrepreneurial assets.

In our efforts towards securing the rights of women and girls, society has an important role to play. Without that support and general understanding the task becomes arduous. Most importantly as SDG 5 calls for ending "all forms of discrimination against all women and girls everywhere" as well as ending "all forms of violence against all women and girls in the public and private spheres..."

In order to bring about a transformative shift the entire notion and regressive ideas associated with women would be required. Transition to a more conducive structural paradigm would be necessary-along way to go but the new normal does create an opportunity to do so. This opportunity can be capitalized within the context of post COVID-19 recovery.

The Constitution of Pakistan guarantees rights for all. There are a number of laws that have been passed over the last several decades. However, it is the enforcement and implementation of the laws which is deficient. For this structural adjustments and changes are needed bringing about a transformative change in approaches towards women issues. Pakistan will stand to gain by moving along the global paradigms on development, growth and gender equality.

SDGs do provide space for accommodation of national priorities and local environment. But for our own sake that environment must be made sustainable by pro-women rights-based approach.



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## DEVELOPMENT AND S&T NEWS FROM MEMBER STATES AND BEYOND

#### COVID-19 Related Developments from Member States

Some notable undertakings related to COVID-19 R&D from Member States are as below:

Jordan: The Higher Council for Science



and Technology (HCST) of Jordan has taken certain measures to mitigate the impact of coronavirus

pandemic on various sectors.

"Teach yourself" initiative has been launched in Jordan as a result of collaboration between HCST, Ministry of Higher Education and Scientific Research (MoHESR), Accreditation and Quality Assurance Commission of Higher Education Institutions (AQACoHEI), and some Jordanian universities. The initiative is aimed to utilize the already existing digital learning materials by many of the universities in addition to using open source material available on the Internet. Moreover, the initiative will help set the stage to institutionalize digital learning within a "blended" system of distant-digital learning.

Also, the Scientific Research and Innovation Support Fund (SRISF) of the Ministry of Higher Education and Scientific Research of Jordan has launched a call for proposals "Corona Virus in Jordan: Effects and Solutions" for projects aimed at combating the impact of coronavirus pandemic on various sectors in Jordan.

Iran: Iran has begun the clinical trials



of its fourth indigenously developed vaccine for the coronavirus named Fakhra (Iran Front Page, March 16,

2021). The vaccine, named after the late Iranian scientist Mohsen Fakhrizadeh, has successfully completed animal



testing phase. The country also hopes to start vaccination drive in a short time.

**Morocco:** The European Centre for



Digital Competitiveness has ranked Morocco as the "most improved" country in the MENA region

for digital competitiveness in 2020 (Morocco World News, April 20, 2021). Since 2017, Morocco has been working towards developing its digital capacities by establishing the Digital Development Agency (ADD) to oversee the implementation of a state-run project titled "Horizon 2025". The project has four major objectives: digitizing Moroccan administration, accelerating the development of Morocco's digital economy, improving social inclusion and human development, and establishing a digital-friendly environment in Morocco. The COVID-19 pandemic has accelerated the progress towards some milestones set by Horizon 2025.

In the backdrop of the Pandemic, ADD created the project "Digital Generation" to prepare Morocco's next generation for a future where digitization controls the workforce. The project aims to improve the competitiveness of Moroccan companies by training the digital talents they need by developing a "digital training ecosystem to meet Morocco's current and future needs". Nigeria: In response to the pandemic,

the Federal Ministry of Science and Technology (FMST) of Nigeria initiated several key projects,

programmes and other related activities on COVID-19 pandemic, some of which are given below:

- Upgradation of existing molecular diagnostic laboratory to Level-III diagnostic laboratory;
- Capacity-building, development and production of rapid molecular diagnostic testing kits that can provide results in thirty minutes for rare bacterial and viral infections;
- Evaluation and authentication of anti-COVID-19 activity, efficacy and safety of herbal remedies, natural compounds and related products submitted to FMST by Nigerian scientists, researchers, and traditional medicine practitioners; and
- Development of various models/ systems for remote patient monitoring, digital therapeutics, home services, etc.

**Somalia:** Somalia has teamed up with



international organizations to launch an online learning platform for primary education as

the country grapples with the effects of COVID-19 (Xinhuanet, March 30,



2021). The online platform launched in partnership with the EU, Global Partnership for Education (GPE) and Save the Children Somalia program will benefit 392,400 primary school children affected by learning disruptions due to COVID-19 pandemic to continue their learning remotely.

The initiative, dubbed the COVID-19 Accelerated Funding program, is funded by the GPE to help countries with COVID-19 response as it aims to ensure the continuity of learning and maintain the well-being of teachers and students by development and implementation of alternative distance learning options.

#### **Sudan:** The Ministry of Higher



Education and Scientific Research of Sudan established a "COVID-19 Working Group", a

consortium of universities and research centers to aid country's response to COVID-19. Some research activities of the Consortium include:

- Viral detection to ascertain the proportion of clinical to subclinical cases;
- Analysis of genomic data of human

and viral sequences to understand variation;

- Study of disease transmission patterns; and
- Recording phenotypic, ecological, environmental and behavioral data, in addition to determining the socio-economic impact of the disease.

The COVID-19 Working Group held its first meeting in December 2020 with a view to discuss various aspects of the disease as well as to share information relating to COVID-19 pandemic in Sudan. The meeting broadly deliberated on topics, including modeling of COVID-19 outbreak in Sudan, best practices in COVID-19 testing, and safety and efficacy of various natural and synthetic therapeutics.

#### Turkey: Turkey has begun the human



clinical trials of its vaccine which is based on virus-like particles (VLP) method (Daily Sabah,

April 18, 2021). Developed as part of the vaccine studies of the COVID-19 Turkey Platform, the vaccine is the fourth VLP-based vaccine to begin human trials in the world. Turkish Minister for Industry

and Technology, H.E. Mustafa Varank, and Prof. Dr. Hasan Mandal, President of the Scientific and Technological Research Council of Turkey (TUBITAK), have also volunteered for the human trials of the vaccine.

The vaccine has been developed by Mayda Gürsel from Middle East Technical University and Ihsan Gürsel from Bilkent University in a joint project. VLP works on the principle of mimicking a non-infectious type of a virus. They are multi-protein structures copying features of viruses but without the viral genome. They trigger an immune response, without the presence of an infection.

Turkey's vaccine is the only VLP vaccine in clinical trials that uses four structural proteins of the virus that are converted into antigens.

#### Morocco Inaugurates First National Center for Nuclear Science

Moroccan Minister of Energy, Mines, and the Environment, H.E. Mr. Aziz Rabbah, has inaugurated Morocco's first national Training Center in Nuclear Science and Technology (Morocco World News, March 28, 2021). As an extension of the National Center for Nuclear Energy, Sciences and Techniques (CNESTEN) in Maamora, near Rabat, the new center aims to equip Morocco's nuclear scientists with the necessary skills to be qualified to safely and sustainably use nuclear techniques. It also seeks to strengthen regional capacities in Africa in the field of nuclear sciences and related technologies within the framework of international and regional cooperation programs.

Speaking on the occasion, the Minister stated that Morocco is striving to make peaceful use of nuclear technology



and added that nuclear applications in Morocco cover broad socio-economic fields, such as industry, health, food, agriculture, water, geology, and mining.

#### Turkey Becomes Member of Scientific Committee on Antarctic Research (SCAR)

Turkey has been accepted as full member of the Scientific Committee on Antarctic Research (SCAR).

SCAR is the international umbrella organization for scientific studies in the Antarctic Region. It organizes research, working groups, collaborations, international conferences and many other events in many disciplines from life sciences to earth sciences, from physical sciences to social sciences.

#### Iran and Syria Extends Cooperation in S&T

Iran has signed several agreements to enhance scientific cooperation with Syria, including export of products by knowledge-based companies (Iran Front Page, March 04, 2021). Iran will also help equip Syrian universities with its indigenously produced equipment both in the medical field and in areas pertaining to science and technicalengineering fields.

Iran also has set-up an Iran's House of Innovation and Technology Exports in Syria to facilitate scientific and technological exchanges between the two sides. This centre is expected to set the stage for expanding the export of products by companies as well as developing technologies in both countries and also transferring technology to Syria.

#### Kazakhstan Partners with EU to Achieve Carbon Neutrality by 2060

Hoping to become a regional renewable energy leader in Central Asia, Kazakhstan and the European Bank for Reconstruction and Development (EBRD) have signed an accord to develop a long-term cooperation strategy to achieve carbon neutrality of the country's power sector by 2060 (New Europe, April 05, 2021). Kazakhstan's Energy Minister, Nurlan Asqaryly Nogaev, and President of EBRD, Odile Renaud-Basso, signed the roadmap for the decarbonisation strategy on March 31. The EBRD and Kazakhstan will cooperate, among other things, on the development of renewable energy and the carbon market, the enhancement of the electrical grid and the decommissioning of old thermal capacity. EBRD is committed to financing renewable energy projects implemented through an auction mechanism. The aim is to promote competitive pricing and to stimulate investment in renewable energy. The EBRD is supporting Kazakhstan's renewable energy drive, with 14 projects worth \$535 million financed to date.

Furthermore, a number of the biggest European companies, namely, Eni, Shell, Total are involved in large-scale oil and gas projects as the North Caspian project, Karachaganak and Dunga in Kazakhstan.

#### UN-Habitat Office Inaugurated in Morocco

National office of UN-Habitat has been inaugurated in Rabat, Morocco (Morocco World News, March 09, 2021). Through the office, Morocco aims to benefit from the United Nations program in the implementation of policies in the field of land development and planning, and sustainable urban development in line with the government's program for National Cities without Slums.

In 2016, the government of Morocco and the UN-Habitat signed a "headquarters agreement" of opening the office to serve as a channel to open up to partner countries of UN-Habitat to certain African countries.

Morocco and the UN also signed the UN-Habitat 2020-2023 country program, a framework that guides the cooperation between the UN program and the Moroccan government.

# COMSATS

#### Scholarships/Fellowships for Member States by COMSATS' Centres of Excellence

Students from COMSATS' Member States are welcome to benefit from the following offers from COMSATS' Centres of Excellence:

- Hundred (100) scholarships for students/researchers for postgraduate studies at all campuses of COMSATS University Islamabad (CUI), Pakistan.
- Five (05) post-graduate scholarships, for Masters of Science in Mathematics at Lahore Campus of COMSATS University Islamabad (CUI), in collaboration with the International Centre for Theoretical Physics (ICTP), Italy.
- Five (05) post-doctoral fellowships at the International Center for Chemical and Biological Science (ICCBS), Pakistan.
- Five (05) post-doctoral fellowships at the National Research Centre (NRC), Egypt.
- Two (02) PhD scholarships at the Al-Farabi Kazakh National University (KazNU), Kazakhstan.
- Long-term (1-2 years) and short-term (less than 6 months) fellowships for foreign scholars for collaborative research at Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences.

For further details on the scholarships, please visit <u>www.comsats.org</u> or write to <u>farhan@comsats.org</u>.

#### 35th Khwarizmi International Award (KIA)

Iranian Research Organization for Science and Technology (IROST), and Iranian Ministry of Science, Research and Technology invites application from innovators, investors, scientists and researchers from across the globe for its 35th KIA.

COMSATS is a privileged partner of KIA since 2000. Every year, COMSATS sponsors the cash award and certificates of the first and second prize winners of the Award.

**Deadline for submission of application:** November 01, 2021

For more information and application, visit: http://khwarizmi.ir/kia/



Science Vision - Call for Papers on SDGs

COMSATS invites scholarly contributions for a special issue of its journal, Science Vision. The journal aims at highlighting the important scientific and technological developments having a bearing on socio-economic conditions of the people. For the special issue, we invite papers on topics related to UN 2030 Global Agenda – Sustainable Development Goals. For more information, please visit the journal's website: <a href="https://www.sciencevision.org.pk">www.sciencevision.org.pk</a>.



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