



H.E. U. L Niyas, Acting High Commissioner of Sri Lanka to Pakistan, visited COMSATS Secretariat to discuss cooperation in sustainable development niches.

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Patron:
Dr. S. M. Junaid Zaidi
Executive Director COMSATS

Editors:
Ms. Farhana Saleem
Ms. Isra Mahmood

Designing & Development:
Mr. Imran Chaudhry

From the Executive Director's Desk

As the ramifications of COVID 19 unfolded, more and more countries and regions got engulfed in the pandemic related crises. COMSATS member countries such as Iran, Turkey and Pakistan saw an upsurge in the infections, driving home the questions about health infrastructure management, emerging responses and more importantly early warning systems. Notwithstanding, WHO's timely advisories, the systems and structures were not equipped to deal with the colossal challenges. In the age of global interconnectedness and mutual dependence such pandemics as COVID-19 know no boundaries. Hence solidarity in fighting the disease is need of the hour.

Within its given resources, expertise and past experiences, COMSATS has endeavored to play its proactive role in contributing towards, though modestly, in finding solutions to the multifaceted COVID- 19 threats. Building on its strength in Information and Digital Technology and its Tele-health programme, COMSATS took the initiative of organizing webinars, virtual workshops and similar activities with the view to stimulate conversations on the new realities and the dynamics of current and post-pandemic situations. It gives me immense satisfaction to report that some concrete outcomes are in the offing which will actualize in the coming months.

It has been internationally recognized and appreciated that the world women leaders to a

large degree have been successful in containing and reversing the spread of the corona virus. While paying tribute to them, I do want to underscore the renewed global commitment to empowering women. While reminding ourselves of SDG 5 (Achieve Gender Equality and Empower all Women and Girls), we need to take cognizance of the concerns expressed by the UN Secretary General in April that "Limited gains in gender equality and women's rights made over the decades are in danger of being rolled back due to the COVID 19 pandemic." Reproductive, maternal and child care interventions are at the heart of COMSATS' Telehealth programme which are continuing during the difficult times of great strain on health resources, human and material. It is our resolve that the corona virus should not deter us from pursuing these programmes

Commitment to women empowerment is renewed every year on 8 March. An article included in the current Newsletter appropriately flags COMSATS Secretariat's women employees. In order to fulfill the awareness and intellectual needs during this pandemic, this issue also includes an exclusive interview of Dr. Najeeb Al-Shorbaji, who has formerly worked with the World Health Organization as the Director of Knowledge, Ethics & Research Department, and an original article from one of COMSATS' senior officials exploring ramifications of the pandemic on SDGs in this Decade of Action.

HIGHLIGHTS FROM COMSATS SECRETARIAT

Activities Related to COVID-19

Contacts with COMSATS Focal Points in China and Iran on COVID-19 Crisis

China and Iran are active members of COMSATS and have been collaborating for organizing joint capacity building events, offering postgraduate scholarships and postdoctoral fellowships, and executing joint research and development projects.

In the latter half of March 2020, Executive Director COMSATS, Dr. S. M. Junaid Zaidi, made contacts with COMSATS' focal ministries in China and Iran, wherein he expressed support and pledged to stand with the people and governments of the two countries in their fight against corona pandemic. He also thanked the authorities of the two countries for taking effective measures for combating and containing the virus.

In response, H.E. Wang Zhigang, Chinese Minister for Science and Technology, thanked the Executive Director COMSATS for offering COMSATS' support to the Chinese government in the fight against COVID-19 pandemic. He informed that the Chinese government has taken the most comprehensive, rigorous and thorough measures to contain the outbreak, and as a result of united efforts the situation improved.

Further, he stated that China would continue to work with other stakeholders to build an effective response against the epidemic and uphold regional and global public health security through harnessing the power of science, technology and innovation. The Minister stated that as a member of COMSATS, China has strengthened cooperation with other members for the sharing of human and technological resources. In this regard, two Chinese centres that are

affiliated with COMSATS as Centres of Excellence, the International Center for Climate and Environment Sciences (ICCES) and the Tianjin Institute of Industrial Biotechnology (TIB), have played a key role. The Minister also looked forward to COMSATS' participation in China's Belt and Road Science, Technology and Innovation Action Plan.

The Iranian Minister for Science, Research and Technology, H.E. Mansour Gholami, in his response informed that Iran has taken all necessary measures to combat the disease. From the platform of COMSATS, the Minister offered to collaborate with other member countries for finding solutions to such threats.



“COVID19 pandemic has called for urgent action on grand scales for reorienting the health systems and digital coverage as well as for scientific community to cooperate on understanding the future trends and solutions. International cooperation in ST&I has never been more pertinent, relevant and urgent. It is heartening to see China rise from the adversity caused by Corona while other member states are trying to come out. It is hoped that the rest will soon be able to follow suit with due utilization of S&T resources and cooperative measures”.

Dr. S. M. Junaid Zaidi
Executive Director COMSATS

Awareness Talk on “Corona Virus Preparedness in the Workplace”

An awareness talk on “Corona Virus preparedness in the workplace” was arranged for COMSATS Secretariat's employees on 9th March 2020. The talk delivered by Dr. Zawar Ali, Vaccinologist and Travel Health Physician at Excel Labs, Pakistan, covered various aspects of the epidemic including disease prevention and control.

During the talk, Dr. Ali shared some key statistics of disease spread in China and elsewhere in the world and touched upon aspects related to epidemiology, etiology and pathogenesis, especially in the context of Coronavirus disease (COVID-19). He recommended following precautionary measures for the health and safety of the employees at workplace: thorough hand-washing; disinfection of surfaces; proper ventilation of workspace settings; maintaining good respiratory hygiene; and avoiding close contact with persons with flu like symptoms. The audience was also given information with regard to travelling precautions, work contingency plan and steps for quarantine of suspected cases.

The talk was followed by Q&A session wherein Dr. Ali answered various queries related to diagnosis, routes of transmission as well as public health response to COVID-19.

COVID-19 Awareness through Media

Apart from a devoted web-page being developed for Corona, COMSATS has been making intellectual contributions with regard to various aspects of the pandemic through various means, which includes a policy paper for South Centre, articles in COMSATS Newsletter and daily newspapers of Pakistan, and social media.

The devoted webpage is to include



articles from COMSATS' officials, interview(s) from relevant expert(s), and thematic articles from other sources. A look at the pandemic from sustainable development perspective has also been included among other things. It is hoped to serve as a good repository of information on the pandemic with respect to elements and entities relevant to COMSATS.

Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and COMSATS Telehealth officials also remained engaged with news channels and electronic media to advocate good practices and pass on useful knowledge on various aspects of the current pandemic, including distance education, right application of virtual platform for provision of basic amenities, and telemedicine

Engagements with Diplomatic Missions in Islamabad

Democratic Socialist Republic of Sri Lanka

A four-member delegation of the Sri Lankan High Commission in Pakistan, led by the Acting High Commissioner, H.E. U. L Niyas, visited COMSATS

Secretariat on 11th March 2020, and held a meeting with Dr. S. M. Junaid Zaidi, Executive Director, and other senior officials of COMSATS.

Dr. Zaidi apprised the Acting High Commissioner of the ongoing activities and future plans of COMSATS and appreciated the active involvement of the Industrial Technology Institute (ITI), Sri Lanka, in the international programmes and activities of the organization. Dr. Zaidi recalled his recent visits to Colombo and interactions with the Sri Lankan government officials aimed at enhancing collaboration in the areas of mutual interest.

Dr. Zaidi highlighted the S&T capacity of the COMSATS University Islamabad (CUI), and shared details regarding postgraduate scholarships offered by the University for COMSATS Member States. He informed that postgraduate scholarships and postdoctoral fellowships are also available for COMSATS' Member States at other Centres of Excellence in Bangladesh, China, Egypt, Kazakhstan and Pakistan. He also shed light on the objectives and planned activities of the COMSATS Centre for Climate and Sustainability

(CCCS), which has recently been established involving 20 Member States of COMSATS including Sri Lanka.

While discussing the future plans of the organization, the Executive Director acquainted the delegates regarding the efforts being made to establish S&T universities and R&D Centres in COMSATS member states. Reviewing the ongoing collaboration taking place between COMSATS and Sri Lanka, the Executive Director requested the Government of Sri Lanka to depute a suitable officer/expert to work at COMSATS Secretariat on secondment in order to initiate specific programmes aimed at addressing the socio-economic needs of Sri Lanka.

The Acting High Commissioner appreciated COMSATS' activities and achievements in the domains of promoting cooperation in science and technology. He expressed his country's interest in availing the scholarships and fellowships offered by COMSATS Centres of Excellence including CUI. While noting the cordial relations between Sri Lanka and Pakistan, the Acting High Commissioner appreciated the generous offer made by the Government of Pakistan to provide 1,000 scholarships to Sri Lankan students over the period of five years, and shared the efforts being made by the High Commission to take full advantage of this offer.

Further, he discussed the prospects of establishing COMSATS University on science and technology in Sri Lanka, in order to strengthen the higher education sector of the country. He also took keen interest in the activities of COMSATS' Network and desired to expand cooperation in the areas of mutual interest.

He also pledged active participation of Sri Lanka in the activities of COMSATS Centre for Climate and Sustainability.



Republic of Bulgaria

Dr. S. M. Junaid Zaidi, Executive Director COMSATS, made a courtesy call to Ambassador Extraordinary and Plenipotentiary of the Republic of Bulgaria to Pakistan, H.E. Dr. Aleksandar Borisov Parashkevov, on 13th March 2020. The purpose of the visit was to acquaint the Ambassador about COMSATS and to explore avenues of cooperation with Bulgaria in areas of mutual interest.

During the meeting held at the Embassy of Bulgaria in Islamabad, Dr. Zaidi briefed the newly appointed Ambassador on COMSATS' operations focused on bringing peace and development in the Global South aided by interventions aimed at socio-economic development through scientific tools and mechanisms. Towards this end, he informed that COMSATS has forged partnerships globally and instituted programmes and projects in health, education, internet services, climate change and sustainability.

Dr. Parashkevov expressed interest in collaborating with COMSATS' Network for expert-exchanges, faculty development, training and capacity building of scientific workforce. The matter of Bulgaria's possible accession

to COMSATS was also discussed during the meeting. The Honourable Ambassador assured of his support for expediting the membership process.

Science Diplomacy

Meeting with Leading Scientists on Science Infrastructure of Pakistan

A meeting to discuss the future prospects of Science and Technology in Pakistan was held at COMSATS Secretariat on 29th April 2020. The meeting was attended by Prof. Dr. Atta-ur-Rahman, Chairman of Prime Minister Task Force on Science and Technology, Pakistan; Dr. Akram Sheikh, Co-Chair and Distinguished Senior Fellow at Global Think Tank Network (GTTN), Islamabad; Prof. Dr. Muhammad Iqbal Choudhary, Coordinator General of COMSTECH & Director of the International Center for Chemical and Biological Sciences (ICCBS), Karachi (COMSATS Centre of Excellence); Prof. Dr. Anwar-ul-Hassan Gilani, Former Chairman of the Pakistan Council for Science & Technology (PCST), Islamabad; Dr. Aslam Baig, Distinguished National Professor at the National Centre For Physics (NCP), Islamabad; Dr. Kauser Abdulla, Higher Education Commission (HEC) Distinguished Professor and Dean of Postgraduate Studies at

Forman Christian College, Lahore; Dr. Zabta Khan Shinwari, Professor of Biotechnology at Quaid-e-Azam University, Islamabad; Dr. Khalid Mahmood Khan, Secretary General NASIC; Mr. Parvez Butt, Former Chairman PAEC; and Dr. S. M. Junaid Zaidi, Executive Director COMSATS.

The meeting deliberated on the state of S&T in Pakistan and its role in national development along with emphasizing the need for development of human capacity and technological resources of scientific bodies working in Pakistan to help them align with global trends in S&T.

During the meeting, Dr. Zaidi made a presentation in which he highlighted the need for investment in emerging technologies and centering upon contemporary sciences and knowledge. He urged adopting creative and innovation-led mechanisms as means to overcome barriers to economic growth and national development. Further, Dr. Zaidi emphasized the need for capitalizing and building on existing capacities, potential, and infrastructures to strengthen scientific culture in the country.

Discussions during the meeting revolved around various issues of growth in science and technology in



Pakistan along with the potential role of scientific institutions in the development and progress of the country. COVID-19 pandemic was seen as a grave blow on national and global development affecting progress of all sectors in the short and long-run and the need for necessary scientific solutions was underscored.

The participants also discussed the following in the context of improving S&T Infrastructure of Pakistan: KPIs and routine evaluation of S&T institutions; mainstreaming the use of technology/IT in Ministries; funding issues for important S&T interventions and R&D; importance of STI, industrialization and digitalization in national development.

Recommendations were made regarding the structure of STI system in the country in view of the emerging needs and development-related challenges in the region. Industrial growth aided by S&T solutions and R&D was considered important for aiding Pakistan achieve economic and financial stability.

Fellowships and Sponsorships

Nigerian Beneficiary of COMSATS-NCP joint Fellowship Graduates

Under an Agreement with Pakistan's

National Centre for Physics signed in 2016, COMSATS has been providing joint fellowships to young scientists from COMSATS' member states apart from supporting joint research projects between NCP and scientific institutions in COMSATS' member states; and facilitating information sharing, scientific exchanges and technology transfer.

Dr. Raphael Mmaduka Obodo, a PhD scholar from the University of Nigeria, has completed a part of his research work at the NCP under COMSATS-NCP joint fellowship scheme. After his research work on ion-beam experimentation, Dr. Obodo has successfully completed his PhD degree requirements under the supervision of Prof. Dr. Fabian I. Ezema who is the main collaborator of research projects being run by NCP in collaboration with the Department of Physics and Astronomy of the University of Nigeria.

In his research, Dr. Obodo studied the effects of varying doses of copper ion irradiation on the properties of nanostructured nanowires. His research has led to the understanding that low-radiation doses help maintain the electrochemical properties of nanostructures having wide electrical, nanoelectromechanical and optoelectronics applications. Dr. Obodo's research has been

published in a reputable international journal, Science Direct (<https://doi.org/10.1016/j.mset.2019.10.006>).

Startup Founder Workshop for Women

COMSATS in collaboration with the American Institute of Pakistan Studies (AIPS) and the Inter University Consortium for the Promotion of Social Sciences Arts and Humanities (IUCPSS) organized a Startup Founder Workshop on "How to Build Successful Team and Businesses", at its Secretariat, on 3rd March 2020.

The workshop was conducted by US-based certified Scrum trainer and Agile coach, Ms. Cathy Simpson, and had the participation of over 50 female students and faculty members from different universities of Pakistan. The session covered various aspects of Scrum training and Agile manifesto along with techniques for improving team efficiency and management.

In the training, Ms. Simpson discussed contemporary market trends and shared with the trainees some key attributes of a successful start-up. She highlighted the need for developing technical knowledge and soft skills for success of entrepreneurial ventures. Ms. Simpson highlighted team work, sound leadership, trust, effective planning and timely testing essential factors for better product development.

Elucidating on various aspects of agile methodology in this connection, Ms. Simpson emphasized on targeted customers, outcome efficiency and sustainable value deliverance important for its adaptation. She also stressed upon the need to promote entrepreneurial culture and stated that STEM education is important for enabling the culture of innovation, inculcating analytical thinking and increasing science literacy.

SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

R&D at TÜBİTAK MAM-Turkey for Combating COVID-19 Pandemic

By using electrospun nanofiber technology, the Materials Institute of TÜBİTAK Marmara Research Center (MAM), Turkey, has produced "Nanofiber Filters" of high protection N95-N99/FFP2-FFP3 masks. The synthesized nanofiber filters have passed impermeability and breathing resistance tests according to relevant European standards.

The produced mask filters feature a thinner and lighter material compared to their counterparts and offer high impermeability and low breathing resistance giving them an edge over the commercially available products.

Besides, scientists at Food Institute of TÜBİTAK MAM are also working on the development of immunity-boosting products on the basis of reliable scientific studies by taking advantage of Turkey's endemic plant diversity.



Facial Recognition and Monitoring System Developed by Al-Farabi KazNU-Kazakhstan

Students of Physical & Technical Cluster of Al-Farabi Kazakh National University (KazNU), Kazakhstan, majoring in Radio Engineering, Electronics and Telecommunications have developed

a facial recognition and monitoring system - Machine Vision, by using deep learning neural networks.

During the testing phase, video surveillance cameras will be installed in Student Houses as part of the Machine Vision system, containing data on the students living in the dormitories. After testing, the system is planned to be installed at checkpoints throughout the University.

Al-Farabi KazNU Launches Joint Project for Girls in Collaboration with UNESCO

On International Women's Day 2020 (March 8), Al-Farabi KazNU in collaboration with the United Nations Children's Fund (UNICEF) launched the UniSat educational project for girls on the development of nanosatellites.



The launching ceremony was attended by Prof. Tlekkabul Ramazanov, Vice-Rector for Scientific and Innovative Activities at KazNU, Ms. Veronika Vashchenko, Deputy Representative of the UN Children's Fund in Kazakhstan, along with lecturers and students of the University.

Under this project, twenty female students will study courses on creating nanosatellites on the basis of the Science and Technology Park of Al-Farabi KazNU. The five-month course includes stages such as creating

spacecraft, design, programming, assembly, testing and launch. After completing the training, the students will create models of nanosatellites planned to be launched into the upper atmosphere.

CUI-Pakistan Develops Rapid Test for COVID-19

Dr. Azeem Mehmood Butt from the Department of Biosciences of COMSATS University Islamabad (CUI) has developed a unique dual-gene LAMP test for the detection of COVID-19 infection. The method that has already completed a successful first phase trial in China showed diagnostic accuracy of 95-100% in comparison to recommended PCR methods. The test is said to yield results in 30 minutes and is currently in evaluation and testing phase.

Seminar on COVID-19 Held at CUI

The Centre for Policy Studies (CPS), CUI, held a seminar on "COVID 19 and the Nexus Between Global and National Health Governance: Policy Prescriptions for Addressing Pandemics" on 12th March 2020, which was attended by a large number of students, staff and faculty members. By drawing on the existing and newly available knowledge on epidemics and pandemics, the seminar addressed the important aspect of policy formulation for COVID-19.

R&D Activities at ICCBS-Pakistan on Coronavirus

The International Center for Chemical and Biological Sciences (ICCBS), Pakistan, paced up its research activities in response to coronavirus pandemic to help study the dynamics of the event; genetic variations and their correlation with the disease severity; progression

and clinical outcomes of the disease.

Research teams working at ICCBS are employing modern tools, methods and techniques for the genomic analysis of COVID-19 from Pakistan; establishment and optimization of diagnostic kit for COVID-19; study of virus-human cell interactions; and finding possible treatment of COVID-19.

CAS Honors Director of ICCBS-Pakistan

In recognition of his services in the field of bioorganic chemistry, Prof. Dr. M. Iqbal Choudhary, Director of ICCBS, Pakistan, has been honored with 'Distinguished Scientist' award by the Chinese Academy of Sciences. Prof. Iqbal has also been acknowledged for his efforts to strengthen scientific ties with Chinese educational institutes.

CSIR-Ghana Builds Cooperation in Sustainable Forest Management and Bee Farming

The Council for Scientific and Industrial Research (CSIR), Ghana, has entered into a five-year agreement with Lakehead University, Canada, to reinforce research and cooperation in sustainable forest management in Accra, Ghana.



As part of the agreement, competitive research grants would be given to

enhance research, education and commercial development. Under the Agreement, Lakehead University would also share its technological applications in geometrics, forest landscaping, remote sensing, satellite imagery among others to track forest health, structure and factors responsible for deforestation and forest degradation.

On the other hand, the Forestry Research Institute of Ghana (FORIG) of CSIR has signed a Memorandum of Understanding (MoU) with thirteen bee-farming cooperatives in the Ashanti Region to train its members in bee farming business to help improve their economic welfare and livelihoods. As part of the three-year Agreement, the CSIR-FORIG would provide technical and financial support to set up the members for the production of honey.

AQU-Palestine Develops Home-developed Medical Ventilator

Al-Quds University (AQU), Palestine, has developed a fully computerized ventilator from locally available materials amid shortage of standard commercial ventilators and other respiratory support



machines and their building blocks in Palestine.

The prototype has been designed by a team of senior professors from medicine and engineering faculties of AQU and has successfully passed a series of rigorous preliminary medical, safety, and technical tests. The Palestinian Standards Institution (PSI) and the Ministry of Health (MOH) has officially approved the ventilator.

ITI-Sri Lanka Steps up R&D Activities Amid Corona Pandemic

To support the government and private sector in their fight against the corona virus, Industrial Technology Institute (ITI) of Sri Lanka, has initiated some new projects. Below are some of the R&D projects in pipeline at the Institute:

- ITI – SLINTEC – USJP joint project on the development of nano-herbal antiviral mask;
- ITI – SLINTEC joint project on nano formulated alcohol-based surface sterilization formulation;
- ITI herbal-based anti-viral surface sterilizer / protective-mask/gears sterilizer;
- Development of in house anti-viral protective mask testing procedure.

RSS-Jordan Celebrates 50 Years of Scientific Achievements

On 14th April, the Royal Scientific Society (RSS), Jordan, marked its 50th anniversary and on the occasion communicated its resolve to help Jordan in its fight against the coronavirus pandemic. The Society headed by HRH Princess Sumaya bint Hassan has been endeavoring to enhance its scientific and technological achievements locally, regionally and

"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 is 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".

**Her Royal Highness Princess
Sumaya bint El Hassan
President RSS, Jordan**

internationally.

For combating COVID-19, RSS has formed an emergency team to ensure business continuity and the provision of vital services, food, drugs and medical gas analysis, maintenance of medical devices for government hospitals and water and air quality monitoring programmes to ensure public health. Further, it has also set-up its own laboratory to test COVID-19 samples.

Eye on Food Safety and Another Looking for Coronaviruses in Bats

Women during the COVID-19 Era: Dr. Nisreen DaifAllah AL-Hmoud, RSS, Jordan

Dr. Nisreen DaifAllah AL-Hmoud,

Call for Applications

Belt & Road Fellowship Initiative of Tianjin Synthetic Biology Program

Tianjin Institute of Industrial Biotechnology (TIB), China, is accepting applications for short and long-term post-doctoral fellowships in the fields related to synthetic biology. The call is open for Member States of COMSATS and Alliance of International Science Organizations (ANSO).

For more details on qualifying criterion and application process, contact:

Ms. Qianqian Chai

Tianjin Synthetic Biology Program
Office, TIB, CAS
Phone: +86-22-84861925
Email: dlrcxm@tib.cas.cn

of Royal Scientific Society, Jordan, represents a model for Jordanian women who stand in the first rows in the face of the COVID-19 pandemic, leading the Bio-Safety and Bio-Security Center at the Royal Scientific Society (RSS) and contributing with the Center's team in finding novel solutions.

Dr. AL-Hmoud is a microbiologist specializing in research studies and projects related to human health, animal and environment, currently working in an administrative and research role at the RSS Bio-Safety and Bio-Security Center, which is a unique platform for studies and research projects related to the preservation of human health and the environment.

As partners in development and progress, the Women's Network (Women as Partners in Progress (WPP)) monitored the role of Dr. AL-Hmoud and other Jordanian women in dealing

with the current crisis in Jordan due to COVID-19. The Network is concerned with the development of women's policies in Jordan, highlighting the achievements of Jordanian women in all sectors and their active role in the Jordanian society and the labor market.

With experts in the fields of microbiology, virology, molecular biology, environmental health and safety, and risk assessment and management, according to Dr. AL-Hmoud, the RSS Bio-Safety and Bio-Security Centre offers specialized laboratory-testing services for various types of specimens and focuses on technology transfer, education, training and the capacity building of local and regional institutions.

Dr. AL-Hmoud states that she is working within the "Western Asia Bat Research Network, WAB-Net", which is the first bat research network in the region with the aim of integrating ecological research on bats with virus surveillance to find "win-win" solutions that promote bat conservation and safeguards human health. The network includes representatives from Jordan, Georgia, Turkey, Pakistan, Lebanon, Iraq, Oman, Saudi Arabia, United Arab Emirates, Azerbaijan and Armenia.

Since project inception (in October 2017), standardized protocols for non-lethal bat sampling, site characterization, and screening bat-associated coronaviruses were developed. Demographic data and diagnostic samples from 350 individuals from five bat species were collected from four different sites in the north of Jordan. Collection of bat samples and detecting the presence of coronaviruses in the collected samples will be continued in the upcoming three years in different locations in the south of Jordan to characterize the coronavirus strains that inhabit the bats in Jordan, and to study its capability to infect



humans. The team will consider testing COVID-19 in future bats samples that will be collected within the framework of the project. In this context, it is worth to mention that working in this project requires that the research team works long hours in the field (10-12 hrs.) during the night due to the fact that bats are mostly active after dusk and up until dawn.

Dr. AL-Hmoud believes that the research has an active and essential role in fighting the COVID-19 pandemic and in ensuring that the virus will not re-emerge in the next seasons. Today, the research team is living in critical and effective period trying to understand the mechanisms of transmission of COVID-19 and the duration of infectivity. In this regard, the research team at

the Center is working on developing a vaccine to protect against COVID-19 based on innovative ideas; where the immunogenicity of this vaccine will be tested in animal model. As soon as the vaccine passes the phase I of trials, the candidate vaccine will be subjected to the subsequent phases. Besides, the research team will start testing the efficacy of the newly developed product by IK HealthCare. It is believed that this product "ANTI VIRUSIK" can stimulate and modulate the immune function of the host.

On the other hand, Dr. AL-Hmoud says that, during the current crisis due to COVID-19 pandemic, she and her team are working on examining the shipments coming to Jordan to ensure that they are free of COVID-19 in cooperation

with the Jordan Food and Drug Administration (JFDA). Dr. AL-Hmoud adds that the Center has an active role in the daily life of the Jordanian citizen without being at the forefront through our work with the Ministry of Water and Irrigation / Water Authority of Jordan to study different water sources and to make sure that they are free of coronavirus. Besides, the research team at the Center has developed a project idea to test COVID-19 in wastewater effluents from isolation hospitals.

Dr. AL-Hmoud does not hide that her family are worried about her because she works with her research team on studying and examining coronaviruses in different samples. However, her family is aware of the importance of her work especially the fieldwork. Dr. AL-Hmoud states that she takes all the necessary precautions and mitigation measures, especially during sampling the bats and processing the samples in the field: "The nature of my work makes me aware of any related risks; through taking all precautionary measures, I ensure my safety and the safety of my family"-Dr. AL-Hmoud said.

Dr. AL-Hmoud is proud of her work, and said, "I would like to have a bigger role in fighting coronavirus"; stressing that the RSS is dedicated to serve the country, and we are part of this institution and part of this country. Dr. AL-Hmoud elaborated that the research team is willing to support all national efforts and the Ministry of Health in detecting COVID-19 in clinical samples and to provide other services on a voluntary basis.

Dr. AL-Hmoud concluded that she is proud to be part of the fight against COVID-19 pandemic to protect the country alongside the health and security staff, and also to be part of this large institution - the Royal Scientific Society of Jordan.

Arab Women in Science

By HRH Princess Sumaya bint El Hassan

It's a common trope that Arab women lack equality of opportunity and freedom to engage with the world. The received wisdom is that they are prevented from pursuing an education and a career by religious and/or cultural restrictions. But the truth is more nuanced. Religion and culture are not the strongest determinants of Arab nations' approaches to women's education—systems and resources are. Choosing to see religion or ethnicity over economics and prosperity is both careless and damaging.

There is no religious bar to education for women in my faith, Islam. Indeed, according to religious doctrine, the acquisition of knowledge is binding on all Muslims, regardless of gender. A peppering of female role models, stretching back to the earliest days of Islam, supports this assertion and gives women today a pedigree to be proud of. For example, in 859 CE, Fatima al-Fihri founded the University of al-Qarawiyyin in Morocco, today the oldest continuously operating university in the world. Of course, highlighting this heritage of education must not disguise the cultural impact of patriarchy in some societies that are predominantly Muslim, but it is a way to put that in its proper place—that is, patriarchy is neither unique to the Arab world nor intrinsic to its predominant religious tradition. Arab women have more opportunities to pursue an education and career in Malaysia, Qatar, Kuwait, and Bahrain but fare much worse in Afghanistan, Yemen, Sudan, and Chad. Why? The differences have little to do with a common religion and more to do with economic development and national prosperity.



For Jordan, there is an interesting story to be found in the middle of those extremes. In a 2019 report by the Organization for Economic Cooperation and Development, Jordan was one of three countries where women felt more comfortable with mathematics than men. The reality of Jordan's university output is also surprising. According to the most recent data available (2016), almost half (47%) of undergraduates in science, technology, engineering, and mathematics (STEM) fields were women. In the same year, 56% of M.Sc. degrees and 61% of Ph.D. degrees in STEM fields were awarded to women. Unfortunately, many of these women graduates now face an environment that provides a strong university education but little opportunity to forge a career path close to home.

The challenge is not persuading Arab societies, and the families that define them, to open STEM education to their daughters. The issues arise further downstream. Jordan's pipeline of scientific female talent flows most strongly at its beginning. Like many other nations, research-strong or not, the cracks begin appearing quickly as this talent flows through. Today, just 19% of Ph.D. researchers in Jordan are women.

This is partly because the deep social cohesion within Arab societies places a greater onus on women to juggle their careers while playing an integral role in family development. This challenge is not specific to Arab women but to most women in science. We, in Jordan, must ensure that opportunities are available closer to home for women scientists to flourish. Jordan spends only 0.3% of its gross domestic product on research and development, which translates into a failure to create meaningful career pathways for women—or anyone—with a STEM education. This has left Jordan as a consumer, rather than a producer, of new knowledge.

Jordan cannot create opportunities without the honest engagement of global actors. Research-strong nations are well-placed to leverage our research-weak systems and to profit from talent mobility. For Arab nations, like Jordan, the result is a drain of STEM talent, including women. This situation is not going to change overnight. If we truly want to help Arab women scientists to thrive, then both Arab governments and the global science community must invest in improving career prospects in Arab countries. The global science community needs to be mindful of the real challenges facing Arab women in science—those that are universal to women in science and those that are distinctly related to an absent science infrastructure—and not to be sidelined by the tropes that veil the truth. Arab women in science are educated and ambitious. Let's give them opportunities at home so that they can help build a better future for all.

Her Royal Highness (HRH) Princess Sumaya bint El Hassan is the President of COMSATS' Centre of Excellence in Jordan – the Royal Scientific Society (RSS). She is the founder of the Reticular Foundry, which provides research opportunities to emerging scholars in Jordan. Email: president.office@rss.jo

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COVID-19, INFODEMIC, AND EHEALTH

INTERVIEW WITH FORMER DIRECTOR KNOWLEDGE, ETHICS AND RESEARCH AT THE WORLD HEALTH ORGANIZATION

Dr. Najeeb Al-Shorbaji

COMSATS' team reached out to Dr. Najeeb Al-Shorbaji*, President, Jordan Library and Information Association, to seek his expert views and opinions on COVID-19. Formerly the Director of Knowledge, Ethics and Research at WHO/HQ, Geneva, Dr. Shorbaji is also the President of eHealth Development Association of Jordan, and Independent Consultant in Knowledge Management and eHealth. Belonging to Jordan, Dr. Shorbaji holds a PhD in Information Sciences.

Dr. Azeema Fareed, Principal Medical Officer and Focal Person of COMSATS Telehealth at COMSATS Secretariat asked him some pertinent questions relating to COVID-19 in his areas of expertise. Here is what we learnt:

1. How bad has Jordan been affected with Corona Pandemic and what, in your opinion, the situation will be like in the coming few weeks in the Middle East?

The official statistics provided by the daily press conference of His Excellence the Minister of Health shows a low prevalence of the disease. As of 10 April 2020, the country has 372 registered cases, of which 161 have already recovered and left hospitals while seven patients have died as a result of corona. The country has been under curfew since 21 March 2020 with the aim of preventing the spread of the novel coronavirus. On 9 April, the Government imposed a full curfew for 48 hours during which nobody is allowed to go out of their homes for any reason except the health personnel with special permits. In fact, the Minister of Health has just announced that there have been zero cases today for the first time since the first case was reported on 2 March 2020 of a Jordanian coming back to Jordan from Italy. Between 2 March to 10 April 2020 a number of interventions have been made by the government including isolation of people coming from abroad, partial



curfew, full curfew, allowing small shops and groceries to open, home delivery and heavy punishments on those who break the rules including confiscating of cars and financial penalty.

The situation in the Middle East is much more difficult to assess for a number of reasons:

- Many of the countries of the Middle East are in emergency situation as a result of man-made disasters in the form of war, refugees, occupation or embargo. That includes Syria, Yemen, Libya, Somalia, Palestine and Iran. People and governments are busy managing immediate needs;
- A serious problem in many MENA countries is the lack of transparency on number of people affected, hospitalized or even death rate of corona;
- Weak health systems and lack of test kits mean that not necessarily all potentially affected persons are tested or even reported.

The future will depend on the level of recognition of the risks and the dangers of this pandemic on health and other socioeconomic structures of communities. Lockdown forever is not the solution

and many countries started to pay the economic cost of this. I am sure the world will be different after its full recovery from the pandemic. I think countries will look at health and health systems as a cost-containment element and not as a costly investment that should be avoided.

2. How digital technologies are helping prevent, mitigate and treat the pandemic?

Digital technologies are essential in helping, mitigating and treating the pandemic. In Jordan, for example, the daily press release by the Minister of Health, the Minister of Information and the Army General is something that people wait every night to watch. The same appears on the Ministry of Health website and is reflected on the social media platforms. The Government keeps people informed and alert about the situation. A number of websites have been either activated or developed to educate people on the risks and ways to protect themselves from the virus. One extremely important strategy that is being promoted is social distancing. 'Stay at home' is the most used term these days. To treat the pandemic, at least in Jordan, people have to go to hospitals if cases are confirmed, if not confirmed then self-isolation. For patients of chronic diseases, a new platform has been put up to allow for renewal of prescriptions and home delivery of medications. This platform is both a type of telemedicine service and delivery of medications from distance.

3. There is hype on the use of information and digital technologies all over the world. Do you think this role of digital technologies is inflated?

The role of information and digital technology is not inflated. I believe it is underutilized. I think it is a must to use it and it has become a reality. The International Academy of Health Science

Informatics (IAHSI) of the International Medical Informatics Association (IMIA) has issued a statement and approached the World Health Organization (WHO) (<https://imia-medinfo.org/wp/statement-from-the-international-academy-for-health-sciences-informatics-iahsi-the-academy-of-the-international-medical-informatics-association-imia-to-the-director-general-of-the-who-on-the-use/>). The statement urges WHO Director General to take certain actions to enforce the use of digital health to combat this pandemic and the future ones. I am a member of a number of working groups discussing the use of artificial intelligence in health and specifically in pandemics based on the full understanding that digital health can be used for surveillance, prevention, diagnosis, and treatment of pandemics in all countries and communities. Without the digital technology it would have been impossible to disseminate knowledge about the pandemic. eLearning and distance education are enabled by this technology. Mapping of the disease and use of geographic information systems (GIS) are basic epidemiology applications. Mobile health and tracking of people in general and patients in particular are very much in use and many applications are being developed. Treatment of patients especially testing and diagnosis are enabled by digital technology. We have to observe very carefully the ethical concerns emanating from the use of digital technology such as privacy and confidentiality. Digital health use should not be manipulated by governments to access files of persons and then "punish" them for certain ideas or attitudes.

4. What's your take on the infodemic (Fake news, herbal remedies) on Corona that has spread more rapidly than the disease itself? What would be your advice to governments and agencies as to how to power through the counter-effect of the infodemic?

What is called infodemic (was even used by the WHO DG early on) is one major challenge to governments and communities in the face of this pandemic. There is too much fake news in the form

of deliberate misinformation on the social media. A lot of disinformation and too much information that has made an overwhelming flood of information that people are not able even to process. Knowledge, quality information and discipline are among the most important tools to fight the pandemic. It is most unfortunate that conflicting news and information is being exchanged and shared on COVID-19 which is a major threat to social and economic existence of countries. Politicizing the pandemic and racist comments about its origin and source are not in any way helpful. Accusations of other countries and organizations coupled with total lack of respect to others and lack of collaboration result in the current state of affairs. Few years back the term infodemiology was used in the literature which aims at providing better understanding of how very low-quality information is being shared and disseminated. It has become the pandemic itself on social media and websites that are dedicated to misleading people. In fact, the Jordan's Minister of Information made it very clear when he said "our mission is to provide you with accurate and update information on the pandemic".

5. What would be the key components of a good communication strategy in times of pandemic?

A good communication strategy is to be transparent and truthful about what is going on. High quality evidence-based information should be shared with people, engaging the community in the fight against the pandemic through collaboration, social distancing and solidarity. Information on the pandemic should be straight, simple and actionable. Communication should be frequent, current and up to date provided by those in charge (accountable) and those who know only (health professionals). The pandemic is fast changing and that requires fast communication. The media is full of ignorant people speaking about the pandemic. Even people started to make jokes about that.

6. Do you think world is now going to realize the importance of Telemedicine with policy makers taking it more seriously in the future? What technologies, do you foresee, are going to be the future of public health?

Telemedicine and the wider scope of telehealth is the best way forward. They go along the concept of "stay at home" and "keep a distance". Let the data move, and not people, using the technology and the skills of professionals remotely. I guess it was in 2012 when we came up to the concept of H2H, i.e., from "Hospital to Home" which simply means use the technology to monitor and report health situation of the individual from home without having to bring them to hospitals. Hospital infection is one big killer which can be avoided by keeping people away. Wearables, sensors, etc. are good means to transmit data in real time for health care providers to act upon. Telemedicine is excellent way for learning and for second opinion let alone diagnose and treatment. Telemedicine application is not without challenges: some legal, some ethical and some technological. The best way is to go for it and resolve problems while going as long as there is a national policy for it, especially to build trust and compensation. I am not with performing tele-surgery due to unreliable links. We have to be extremely careful that about 50% of the world population does not have access to the Internet and they don't have the digital means. "Leaving no one behind" means using whatever technology available to us to achieve Universal Health Coverage so that the principal of equity is respected.

**Through his career in WHO, Dr. Shorbaji initiated and led a number of information and telecommunication technology projects and knowledge networks. He is a member of a number national and international professional societies and associations specialized in information management and health informatics. He has authored over 80 research papers and articles presented in various conferences and published in professional journals. (Email:shorbajin@gmail.com)*

COVID-19 CRISIS: AN UNPRECEDENTED PUSH FOR SDGS ACTION

Ms. Huma Balouch

The current financial market turmoil, crude oil prices slump and temporary truce in all armed conflicts around the world in response to the COVID-19 pandemic chaos makes it clear that the intrinsic value of health sector goes beyond its contribution to human development. The catastrophic impact of COVID-19 crisis and the highest one-day death toll being reported in developed countries starkly spotlights the centre of gravity on the health related issues that receive a lot less attention than economic sector, but are equally or perhaps even more crucial from a long-term development perspective for developed as well as developing countries. The massive educational, business, industrial and other workplaces closures hinge strongly on the premise that no one is left behind in terms of health is crucial as a precondition and driving force for inclusive economic growth and development, poverty alleviation and universal access to education. Of course, COVID-19 is not the first global public health crisis. However, this time the social and economic disruption and uncertainty created by the outbreak has vast and far-reaching impact on every sector and every individual.

In view of inadequate responses to the Millennium Development Goals to overcome the challenges of a changing climate and weather extremes, conflict, inequality, hunger and malnutrition, water insecurity, rapid urbanization and disease outbreaks that left us all more vulnerable, several countries learned their lessons and responded far more rapidly to United Nations' universal call

to action for SDGs. As actions which may contribute to one of the SDG targets may also have an impact on other targets, SDGs are quite clearly more interdependent and integrated. Such recognition is especially crucial as some overarching issues, such as pandemics, can affect multiple targets simultaneously and exponentially. For instance, the ranking of some of the countries with leading positions according to their GDP (PPP) per capita drops significantly in the Human Development Index when economic dimensions of health inequality is taken into account. Likewise, achieving equitable access to healthcare requires going well beyond the health sector to take action in related areas such as education, income and social protection, water and sanitation, governance, and Information and Communication Technologies (ICTs) industry. The relationship between the role of health equity and growth in ICTs adoption also works both ways around. Such interlinked nature of SDGs and its explicit health-related targets provide a new context as there is a health component affecting achievement of many of the targets such as attaining gender equality, reducing poverty and improving education, not just those under SDG 3 (Good Health & Well-being - Ensure healthy lives and promote well-being for all at all ages).

Following the UN Sustainable Development Summit, held for the adoption of the post-2015 development agenda, and in response to the global emergence of more than thousand epidemic events in more than hundred

countries in just 15 or so years, some hopeful signs were seen during 2016-2017, when UN Secretary-General's Global Health Crises Task Force (in 2016) and WHO-World Bank joint Global Preparedness Monitoring Board (in 2017) were established to mobilize and strengthen collective national, international and multilateral action for global health security and emergency preparedness. But despite considerable economic upheaval caused by viral outbreaks, and clearly identified mechanisms and policy solutions by the relevant health panels, an overwhelming majority of countries failed to make a fundamental shift in their health policies and were unprepared for the next devastating pandemic outbreak.

SDGs provided both an obligation and an opportunity to the leaders to rethink development systems and approaches to overcome problems to collective action in the social, economic, and environmental dimensions of sustainable development. Thus far, the United Nations had declared climate change as single biggest cross-border threat that gravely threatens the global progress and its sustainability. The United Nations and its relevant agencies and operational arms urge the countries to give renewed impetus to the mitigation, adaptation and building resilience to the climate change from a technological, business, legislative, and even political perspective. Unfortunately, the enormous threat that climate change already poses to human health could not duly mobilise the leaders of the developed and developing countries to take action.



About the Author: Ms. Huma Balouch is Senior Assistant Director at COMSATS Secretariat Islamabad. Ms. Balouch has, inter alia, been working to promote and map awareness of SDGs among COMSATS' Network and played a pivotal role in taking COMSATS' first step in this process through encouraging universities in Pakistan to embed SDGs within their Institution's strategies and practices.. [Email: huma@comsats.org](mailto:huma@comsats.org)

The Food and Agriculture Organization (FAO) and World Health Organization (WHO) of the United Nations has intimately linked 9 million deaths worldwide from hunger, 7 million deaths from air pollution, 3.4 million deaths from water-related diseases, and 150,000 deaths from extreme weather every year to global climate change. An unmitigated climate change is expected to cause quarter million additional deaths a year between 2030 and 2050. We are witnessing the adverse impacts of climate change now faster than at any point in the world's history, however it failed to generate sufficient sense of urgency to take measures towards building resilience and reducing vulnerability, as envisioned in the 2030 Agenda for Sustainable Development and SDGs.

Imagine if a country reduced its carbon footprint by a quarter in just two weeks, dramatically improves its Air Quality Index from 303 to 92 in a month, and its electricity demand plummeted by 30% compared to the same period the previous year. These earlier unimaginable scenarios have turned into reality in China, India, and Pakistan as a result of the ongoing pandemic crisis of COVID-19. Many of us are seeing its effects on the climate as a silver lining but this is a wildly mistaken and short-sighted interpretation of pandemic's dark clouds. Governments were compelled to making unprecedented decisions of nationwide lockdowns that created these unintended environmental co-benefits, which are not conscious mitigation strategies based on multi-objective science-based approaches, but are unintentional externalities of pandemic fear. This reprieve will only last as long as the COVID-19 does and does not ensure the well-being on environment in the long-run.

Nevertheless, the positive environmental impact of this pandemic

is stark indicator of interdependent relationship between health, environment and economy that constitute the core of Sustainable Development Goals (SDGs). The lack of planning and preparation for the present and previous outbreaks of this decade are a strong impetus that the targets of risk reduction, mitigation, and resilience-building in the following Sustainable Development Goals: Goal 1 (poverty); Goal 2 (hunger); Goal 3 (good health and well-being); Goal 11 (sustainable cities and communities); and Goal 13 (climate action) must be prioritized now in the policy design and delivery to make them preventive rather than reactive, to potentially catastrophic events in the future.

Whenever the world experienced a health crisis, it provided an opportunity for creating major changes. For instance, all spheres of political leadership in the global system interact, reinforce, and implement adaptive decisions at much faster pace in response to humanitarian emergencies. The current situation suggests a clear need to adopt a coordinated approach which may not focus solely on overcoming the crisis but ensure effective short and long-term initiatives with engagement of all political stakeholders, civil society actors, private sector and public institutions to better design the frameworks and responses to make the best use of the synergies between different goals as well as to manage aftermaths of pandemics. It is abundantly clear from the unprecedented suffering of the already unequal World exacerbated by COVID-19 that all countries must seek immediate support from their local government systems, private health services providers, local donors, and community volunteers to streamline effective and equitable emergency preparedness and response capacity. One such capacity that is now more relevant than ever is of the digital and

mobile technologies in healthcare delivery system.

This pandemic crisis has pushed societies at all levels to recognize that health is central to the core dimensions of sustainable development – economy, society and environment. The term Sustainable development came into the limelight in late 20th century as a result of the rising public concern over the unrestricted resource exploitation leading to global ecological, financial and health crisis. Calls for concerted action for strengthening the institutional foundations to support developing countries in their efforts to harness S&T for their sustainable socio-economic uplift came following the United Nations Conference on Environment and Development (UNCED) in 1992. One of the earliest and thoughtful contributions made in this vein was by Pakistani Nobel Laureate, Prof. Dr. Abdus Salam, who gave the idea of establishing an Intergovernmental platform, the Commission on Science and Technology for Sustainable Development in the South (COMSATS), for providing visionary leadership to developing countries for utilizing and mobilizing STI as an integral component of strategies for promoting sustainable development.

At its inception as a high level forum of regional cooperation in S&T, represented by Heads of State/ Government, COMSATS assumed an advocacy role for sensitizing the relevant government machinery in its 27 Member States for investing in STI for development and encouraging the decision-makers to strongly interact with the scientific community to incorporate relevant mechanisms and policies in their activities and development agenda. A platform for the latter was also made available in the form of a network of 22 renowned International Science and Technology

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WOMEN AND SDGs: COMSATS' PERSPECTIVE

The discussions on social engagement, inclusion, and gender issues have long transcended the conventional ideas at varying extents throughout the world. However, evolution of roles and rights of women is and will remain pertinent and relevant, among other things, owing to the following statistics. According to World Bank (2018), women constitute 49.6 percent of the world's population, 49.3% in East Asia and Pacific, 51.54% in Europe and Central Asia, 50.8% in Latin America, 48.21% in Middle East and North Africa, 50.51% in North America, 48.4% in South Asia and 50.1% in Sub-Saharan Africa. These figures alone show the magnitude of the population but the related gravity is established based on the figures showing their representations in various sectors and fields; women researchers are 29.3% for World to quote just one example. The implications and on the flip side the benefits of addressing these gaps are huge.

Alongside the good tidings on achievement of important milestones related to gender parity in education, health, economic and political systems, the World Economic Forum's Global Gender Gap Report 2018 has also indicated the emergence in advanced technologies. This implies that any activity that addresses Gender Parity needs to remain abreast of the emerging trends across sectors and regions for a more holistic approach and better impact.

With a devoted Goal (SDG5), the UN 2030 Development Agenda has set out 9 targets and sub-targets touching on discrimination, protection, careers, leadership, empowerment, health and reproductive rights, equality, education and technology savvy, and gender policies. Although, women are direct beneficiaries of this Goal but the whole world stands to benefit from the better social and societal gains

if this Goal is achieved, by rendering this huge population of the World better placed and equipped to help in achieving other Goals. A glimpse of the same can be had from the UN Women's Report 'Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development' reporting summation of the broad gains from good inclusion of women in the development process.

Following are some views the remarkable women of COMSATS Secretariat have to contribute on some SDGs to the world on this International Women's Day.

"Women are the most vulnerable of all global populations in terms of health and related issues due to lack of access to healthcare, gender inequality, lack of education, hunger and poverty. Every

day, 830 women die from preventable causes related to pregnancy and childbirth around the world. Realization of such losses during the last few decades has led to incorporation of such issues in global development agendas such as the MDGs and, later, the SDGs. The efforts are bearing the fruit with reducing maternal mortality, more and more utilization of skilled birth attendants and more awareness on the women health. The way forward to fast track such developments is bank on existing advantages; increasing the number of women in health workforce and realizing the important role of women at home as the doctors of their family with a crucial role in nutrition, hygiene and preventive care. COMSATS Telehealth (CTH) project takes pride in providing healthcare mostly to women through female dominated staff both at rural clinics and urban centres, who



COMSATS
Creating a peaceful world with quality and sustainable living through Science and Technology for last 25 years

On International Women's Day 2020, COMSATS expresses its firm support towards the United Nations Sustainable Development Goals and the role of women in the realization of the Global Agenda. COMSATS appreciates all women playing various roles for contributing towards peace and progress of their nations and are major agents of sustainable development as global citizens.

COMSATS is paving the way for Sustainable Development through:

- Fast tracking socio-economic development and stronger more effective synergies;
- Mobilization of necessary resources through South-South and Triangular Cooperation;
- Capacity-building of developing countries in scientific areas of crucial importance;
- Sharing of scientific resources for a more egalitarian society throughout the world.

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Advertisement issued in a daily journal on International Women's Day 2020

understand and manage women health issues with convenience and comfort. At CTH we believe that a proactive role of women in healthcare is the key to achieving at least 70 percent of the target of SDG 3, "Ensure healthy lives and promote well-being for all at all ages".

Dr. Azeema Fareed, Principal Medical Officer



Dr. Fareed is one of the pioneers of COMSATS Telehealth project. Being a health and development sector professional, she is interested in health-related development narrative, especially SDGs on health and climate (Goals 3 and 13).

"The UN 2030 Global Agenda shows that sustainable development in every aspect of life cannot be achieved by leaving others behind (women, disabled, and those discriminated against). Women empowerment and gender equality is high on agenda of Sustainable Development Goals. In this regard, many initiatives have been started to create opportunities for women in emerging sectors. Over the last two decades women are providing their services in different fields with alternate solutions. As Pakistan is a developing country and has great aspirations to achieve SDGs, it is high time for the country to be working in the dimensions pertaining to reduce hunger and poverty with equal involvement of women in every sector. Without taking the women along in every walk of life, the country cannot come out of these issues threatening its economic prosperity and human wellbeing. In my opinion, goals on gender equality, zero hunger and poverty are directly relevant to women. To make women's role more vigilant, relevant and robust, countries should invest in women's education

and training. Patriarchy should give way to equality for the fulfillment of the 17 SDGs. A way to improve the situation could be setting up small industries and business with more women involvement and leadership roles".

Dr. Mehwish Qayyum Durani, Deputy Director Programmes



Dr. Durrani has a Doctorate degree in Government & Public Policy from National Defence University, with research area in Environmental mainstreaming and policy. With policy-related engagements in her career and her given educational background, she has a keen interest in UN's Global Agenda 2030 of SDG's.

"Women's leadership role is important for recognizing and benefitting from their unique abilities to contribute towards economic growth and societal development. Denying women their social and economic rights in society is equal to depriving half of this world's population of its rights and ability to utilize their potential. Although efforts by the world's leaders and decision-makers have moderately narrowed the gender gap, however, the integrated effect of such actions is still somewhat lacking. More substantial efforts are required to end discrimination against women in private and public sectors; to give women the right to education, good health and sustainable lifestyle, as well as to create fair and inclusive environment to encourage women's participation at all levels, especially in administrative and managerial positions. Not only is it important for peace and development, but it is also required to achieve the SDGs".

Ms. Nageena Safdar, Sr. Assistant Director Administration

Ms. Safdar specializes in Human Resource Management and is playing a lead role in HR and Administration. Her experience includes operational activities in development and



S&T administration organization. She is rendering logistics and administrative support to COMSATS' programmes, including those related to SDGs.

"Despite the notable progress of the global community towards the implementation of 2030 Global Agenda and the indispensable role of women's empowerment in post-2015 development agendas for action, the gender disparity in institutional and decision making process continues to pose major threat to climate actions. It is imperative to provide equal opportunities to women for increasing their knowledge and capacities to strengthen resilience and adaptive capacity to climate change as well as ensuring their equal and meaningful participation in climate change-related national strategies, policies, management and actions. COMSATS is supporting its member countries in the implementation of SDGs through its cross-regional collaborative research programme, the International Thematic Research Groups (ITRGs), providing innovative technology-based solutions to address the common socio-economic regional challenges. Recognizing women empowerment as critical element for sustainable socio-economic development, COMSATS is facilitating women's equal representation in its ITRGs on 'Climate Change and Environmental Protection' and in its activities such as trainings/workshops, expert-exchange through short-term visits and doctoral and post-doctoral fellowships".

Ms. Huma Balouch, Sr. Assistant Director Programmes



With her Doctoral degree in

Biotechnology

underway, Ms.

Balouch has been

working to promote

and map awareness

of SDGs among COMSATS' Network

and played a pivotal role in taking

COMSATS' first step in this process

through encouraging universities in

Pakistan to embed SDGs within their

Institution's strategies and practices.

"International Women's Day is an opportune time to recognize and appreciate the efforts of all women who are working day in and day out in the open to create a world free of hunger and food insecurity in the face of gender disparity. Women constitute approximately 43% of the labor force in the agriculture sector in the developing countries. In the wake of an upsurge in digitalization

that the world has seen over the past few years, we cannot meet informed targets related to "Zero Hunger" unless we empower, educate and train our women farmers and laborers in sound technologies and contemporary methods to increase agriculture productivity and help cope with extreme weather events for the production of smart, resilient and sustainable food systems. In addition, there is a need for equitable involvement of women in the food supply chain from production to consumption level to not only ensure availability of safe and nutritious food to them but also to encourage their participation in the agriculture development process. Among others, knowledge-sharing and capacity-building in the field of sustainable agriculture and food security is a regular feature of COMSATS' international programmes related to SDGs".

Ms. Isra Mahmood, Assistant Programmes Officer

Ms. Mahmood academic background



is in Genetics and

Biotechnology.

Working in the

domains of

Programmes &

Communications,

she has keen interest

and involvement in evaluation,

monitoring and impact of SDGs-

related programmes of COMSATS.

She is employing digital media as a

tool to help create awareness about

sustainable development.

**Compiled by Ms. Farhana Saleem,*

Sr. Communications and Publications

Officer at COMSATS

Secretariat,

Islamabad. With

and academic

background in Public

Policy and English

Literature, Ms.

Saleem is passionate about science

diplomacy and advocacy. She has a vast

experience in S&T advocacy, writing,

copy editing and journal management.

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Centres of Excellence. The Network compliments the organization's efforts for fostering active collaboration and resource-sharing among themselves and their counterparts in other regions. COMSATS is mandated to facilitate achievement of sustainable socio-economic development in the South long before the realization of 2030 Global Agenda. Several important initiatives have been taken by the Commission pertinent to education, environment, health and most importantly South-South and North-South partnerships that hold considerable relevance to the UN sustainable development targets. The major initiatives of COMSATS that laid solid foundations for STI development included, inter alia, establishment of

high-quality educational institutions (COMSATS University) and Infrastructure (COMSATS Internet Service); International Thematic Research Groups (ITRGs) for promotion of cutting-edge research using multi-, inter-, and transdisciplinary approach; COMSATS Telehealth program (CTH) pioneer in using ICTs application for providing healthcare in community-based settings; COMSATS Centre for Climate & Sustainability (CCCS) a broad coalition of academic and research institutions and organizations working on environmental risks to achieving Sustainable Development Goals (SDGs); and various group training courses and workshops for technologists and practitioners from its Member Countries for building and strengthening education and research capacities.

To join and support COVID-19 response

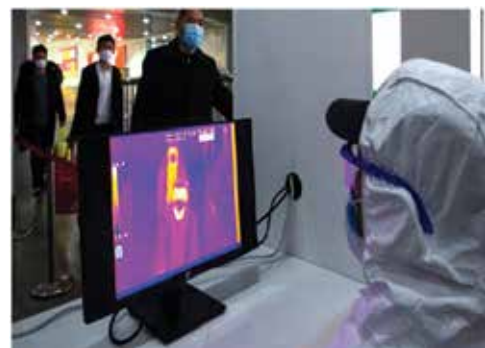
efforts and to carry on the momentum of progress towards achieving SDGs, COMSATS aims to give better insight into wide range of social, economic and environmental determinants of health, bring the regional- and national-level discussions with a multi-sectoral approach on mitigating the socio-economic impact of this crisis and alongside improving capacities and skills of personnel working across health and health-related disciplines. Utilizing South-South and North-South cooperation as mechanism to improve countries' capacities to better deal with the global health crises, the Commission encourages the Governments, development agencies, research institutions, private sector, and civil society to collaborate and to form necessary partnerships that are useful for SDGs implementation before, during and after crises.

DEVELOPMENT AND S&T NEWS FROM MEMBER STATES AND BEYOND

Some COVID-19 Related Activities from Member States

China

After greatly mitigating the COVID-19 pandemic in order to minimize the risk of cross-infection, several Chinese firms are mainstreaming automated technologies for contactless delivery, spraying disinfectants and performing basic diagnostic functions. Besides, drones are being employed to transport medical samples and conduct thermal imaging. Advanced AI has been used in China to help diagnose the disease and accelerate the development of a vaccine.



Sophisticated surveillance system such as contactless temperature detection and facial recognition softwares are also being used to keep a tab on infected individuals and enforce quarantines. Smart helmets to detect people with fever within a 5m radius have also been deployed. Applications to track and detect virus carriers have also been developed by several Chinese firms (BBC Monitoring, 3rd March 2020).

Egypt

Zewail City of Science and Technology, Egypt, have developed several products for the identification and therapeutic treatment of coronavirus patients. The institution has designed three



prototypes of low-cost ventilators by using different technologies. A respirator mask made of easily-sterilized medical silicone rubber and equipped with a reusable exhalation valve has also been developed by the institute.

Zewail City also aims to provide a testing system that works with artificial intelligence and deep learning to identify cases of coronavirus from X-ray and CT Scan images, to help specialists in the Egyptian medical sector develop an accurate diagnosis of the disease (Egypt Independent, 6th April 2020).

Ghana

The Centre for Plant Medicine Research (CPMR), Ghana, in collaboration with the Ghanaian Ministry of Health and other stakeholders is working to find herbal cure for the COVID-19. The Centre is researching on some herbal extracts received from the Ghana Federation of Traditional Medicine Practitioners Associations (GHAFTRAM) – some already approved by the Food and Drugs Authority (FDA) – as potential candidates for COVID-19 treatment (Pulse GH, 28th April 2020).

On the other hand, Ghana is employing drones (developed by Zipline company) to transfer COVID-19 suspected samples from remote areas to testing laboratories in Accra and Kumasi (Popular Science, 23rd April 2020).

Iran

Several homegrown products for coronavirus diagnosis, screening and treatment have been developed by Iran. These include a smart gateway that monitors the body temperature and the oxygen saturation of blood and is also used for disinfection; an ozone generator; and a face shield made up of nanomaterial. Besides, test kits for the molecular diagnosis of the novel coronavirus have also been developed indigenously by Iran and the country is also focusing on development of a vaccine for COVID-19 (Tasnim News Agency, 18th April 2020).

Kazakhstan

Under a cooperation agreement between Kazakhstan's Semey Medical University and XLabs, the country has launched an artificial intelligence-based project for study on COVID-19 in Kazakhstan. The project will collect Big Data; analyze data on the spread of the novel virus and epidemiological situation in Kazakhstan and other countries; and compare measures taken to prevent the spread of the coronavirus infection, among others (Kazinform, 28th April 2020).

Pakistan

Students from Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIKI), Pakistan, have developed an artificial intelligence (AI) tool to help diagnose coronavirus amid the shortage of test kits as the government steps up efforts to combat the virus.

The AI-powered deep learning model developed can help detect COVID-19 in 10-20 seconds with 92 percent confidence using computed tomography (CT) scan of lungs. Furthermore, based on medical imagery,

it can help locate the exact position, impact and severity of the damage to the lungs (Gulf News, 23rd March 2020).

Tunisia

With the support of German development agency GIZ, the Italian Society of Medical Radiology and US tech giant IBM, the teachers and students at the National Institute of Applied Science and Technology (INSAT), Tunisia, have created an artificial intelligence-based platform to scan X-rays of individuals suspected with coronavirus. After approval by the Tunisian health ministry, the technology can be employed in areas lacking major hospitals and specialist doctors (CGTN Africa, 25th April 2020).

Turkey

Turkey is conducting the animal testing of a DNA vaccine developed against coronavirus. The research on the vaccine is undergoing with the joint collaboration of the Ege University Drug Development and Pharmacokinetic Research Application Center (ARGEFAR) in Izmir province of Turkey and the Scientific and Technological Research Council of Turkey (TÜBİTAK). After the four months of animal testing, the vaccine will enter the human clinical trials (Hurriyet Daily News, 15th April 2020).

Morocco Enhances Cooperation in Energy Sector

A regional and continental leader in the field of electricity and renewable energies, Morocco has agreed to establish technological and commercial cooperation with the United States of America in the fields of drinking water, sanitation, and electricity. The Agreement between the two states, yet to be signed at the US-Africa Business Summit next year, is in line

with Morocco's vision to strengthen its energy and water sector (Morocco World News, 29th February 2020).

On the other hand, Morocco has established a model of trilateral cooperation between its National Office for Electricity and Drinking Water (ONEE); the Ministry of Energy; and the Moroccan Agency for Sustainable Energy (MASEN) for the development and integration of renewable energies in the national electricity grid. Based on this, the country is committed to extend cooperation to build capacities of Southern African countries in renewable energies (Morocco World News, 4th March 2020).

Ghana Strengthens Ties with UNESCO for the Realization of SDGs

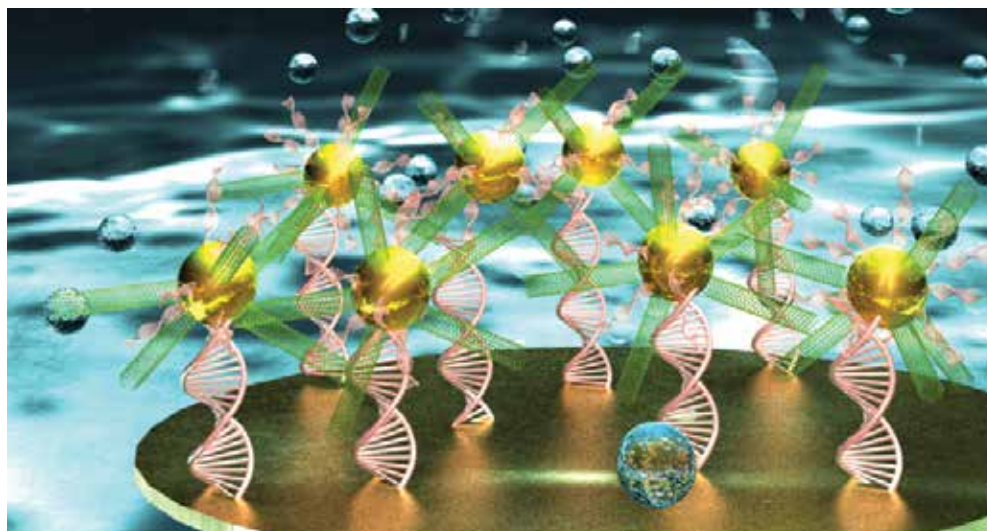
Ghana Institution of Engineering (GhIE) is collaborating with UNESCO to chalk out new plan towards making engineering a key tool for sustainable development. The cooperation was declared in a statement made at the maiden edition of the World Engineering Day (WED) held at the Accra Technical University on 4th March.

The statement made by the representative of UNESCO to Ghana, Mr. Abdourahamane Diallo, further stated that engineering is essential to modern economy and to develop solutions to advance the United Nations Sustainable Development Goals (MyjoyOnline, 9th March 2020).

Scientists Develop Nano-diagnostic system for Early Disease Detection

Early stage disease detection remains one of the biggest challenges in healthcare industry for treatment of many life-threatening diseases such as cancer. Scientists at Missouri University of Science and Technology, Missouri, have found a promising solution to the problem by creating a new, ultrasensitive DNA biosensor. This biosensor can also monitor patient responses to therapies.

The biosensor synthesized from carbon nanotubes and gold nanoparticles offers greater sensitivity and faster response than traditional analytical methods that require time-consuming molecular amplification techniques (Missouri S&T, 7th April 2020).



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

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- Five (05) post-doctoral fellowships at the National Research Centre (NRC), Egypt.
- Postgraduate Scholarships and Post-doctoral Fellowships at the International Centre for Climate and Environment Sciences (ICCES), and Tianjin Institute of Industrial Biotechnology (TIB), under PIFI Programme.
- Four (04) PhD scholarships at the Al-Farabi Kazakh National University (KazNU), Kazakhstan.

For further details on the scholarships, please visit www.comsats.org or write to tajammul@comsats.org and farhan@comsats.org.

Selected Forthcoming Scientific Events in COMSATS' Countries

- 20-21 July 2020 15th International Conference on Virology, Emerging Diseases & Vaccines (Webinar) Future Challenges to Eradicate Viral Infections for healthy life
(<https://virology.conferenceseries.com/events-list/corona-virus>)
- 12-14 Dec. 2020 2nd International Conference on Artificial Intelligence, Robotics and Control AIRC 2020, Cairo, Egypt
(<http://www.airc.org>)
- 21-22 Dec. 2020 International Conference on Future Cities (ICFC), Zarqa, Jordan
(<http://worldresearchsociety.com/Conference/17308/ICFC/>)

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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: www.sciencevision.org.pk.



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