



# COMSATS Newsletter

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

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Ambassador Dr. Nafees Zakaria assumes charge as full-time incumbent Executive Director COMSATS (page 2) [Picture: E.D. COMSATS (2nd from the right) as a panelist during a session of INSME's 18th Annual Meeting, Baku]

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## From the Executive Director's Desk

Climate Change is the most recurrent theme occupying the development narrative for decades and for good reason – the phenomenon daunts the globe threatening development of all kinds. The country hosting COMSATS Secretariat, Pakistan, experienced monsoon rainfalls estimated to be more than 30-year average, even in areas not usually affected too much by heavy rainfalls, such as Balochistan. Climate change related events have trebled in terms of frequency and scale sweeping large areas of countries with long-term effects including displacement of estimated 20million people a year<sup>1</sup>. While the developed world is no stranger to these events, the countries contributing the least to factors resulting in Climate Change happen to be the developing countries that are bearing the larger-scale brunt of the global phenomenon. The estimated annual adaptation needs are growing each year, now estimated projections for 2030 are US\$160–340 billion, expected to rise US\$315–565 billion by 2050<sup>2</sup>.

With a brief exception of 2020-2021 owing to COVID-19 pandemic, Climate Change has preoccupied the international community, especially through deliberations at international fora, such as Conference of the Parties (COP) and Intergovernmental Panel on Climate Change (IPCC). Moreover, the devastating effects of climate change have rightly earned a place in countries' comprehensive national security policies, foreign policies, and international cooperation objectives. As part of its commitment to emerging issues relating to development and advocacy of Science

<sup>1</sup> <https://www.oxfam.org/en/5-natural-disasters-beg-climate-action>  
<sup>2</sup> UNEP Adaptation Gap Report 2022, 'Too Little, Too Slow Climate adaptation failure puts world at risk'

and Technology led development, COMSATS especially focused on climate change during the reporting period of this Newsletter. Coincidentally, this period was a time of great duress to a number of countries across the world owing to different climate catastrophes as the World prepared for serious deliberations on Climate Change in the upcoming COP27.

This is my first editorial as Executive Director COMSATS, having assumed charge of the post in November 2022. Having served as a diplomat for over three decades, I am aware of how global concerns such as Climate, Science Diplomacy, International Cooperation, and Sustainable Development have found their place as a priority area in the foreign policy objectives as well as national agenda in recent times. It will be appreciated that these areas and other related themes are integrated well in COMSATS' objectives, astutely envisioned by its founders and articulated well in stipulations of its statutes.

Climate Change constitutes a dominant theme of this issue that includes a special section on a Climate Diplomacy event organized by COMSATS to mark South-South Cooperation Day 2022. Other important undertakings such as those relating to tele-health, biotechnology, applications of technology for food security and enhancing agriculture productivity are also hoped to evince readers' interest and feedback.

While regretting delay in the publication of this bi-monthly Newsletter, I am availing myself of this opportunity to wish all readers Merry Christmas, Happy New Year 2023 and blessed times ahead.

## HIGHLIGHTS FROM COMSATS SECRETARIAT

### Ambassador Dr. Mohammad Nafees Zakaria Appointed as Executive Director COMSATS

Ambassador Dr. Mohammad Nafees Zakaria assumed charge as the new Executive Director of the Secretariat of the Commission on Science and Technology for Sustainable Development in the South (COMSATS), on November 1, 2022. He has been appointed by the Head of the Government of Pakistan – the host country of COMSATS Secretariat – as stipulated in the relevant clause of COMSATS' Statutes.

The appointment took place in the light of nominations by an international committee, later vetted and approved by the Prime Minister of Pakistan.

Dr. Zakaria's nomination was considered due to his illustrious career at the Ministry of Foreign Affairs, during which he represented Pakistan on various international assignments as the top diplomat. He also has a diverse experience of working with different Pakistani and international organizations.

Dr. Zakaria has succeeded Dr. Ghulam Muhammad Memon, the incumbent Federal Secretary of COMSATS' Focal Ministry in Pakistan, who has had the interim charge of position of Executive Director COMSATS since June 2022. The position of full-time incumbent Executive Director COMSATS had been vacant since March 2021, when Dr. S.M. Junaid Zaidi completed his four-year tenure.

Dr. Zakaria has started calling on key officials of the host country, Pakistan, and diplomatic community in Islamabad especially COMSATS Member States, as well as liaison with COMSATS' fraternity abroad.

### Executive Director COMSATS Ambassador Dr. Mohammad Nafees Zakaria



Ambassador Dr. Mohammad Nafees Zakaria assumed charge as the Executive Director COMSATS on 1st November 2022. By virtue of his position, he is also the ex-officio Secretary to COMSATS' statutory bodies, the Commission, the Consultative Committee and the Coordinating Council. Moreover, he is ex-officio Pro Chancellor-II of COMSATS University Islamabad (CUI), and Chairman Board of Management of COMSATS Internet Services (CIS).

A seasoned civil servant of Pakistan, Mr. Zakaria joined the Ministry of Foreign Affairs (MoFA) in 1988. During his illustrious diplomatic career, he represented Pakistan as High Commissioner to the UK (2019-20), and Malaysia (2017-19). His earlier appointments include Minister (Political)/ Deputy High Commissioner in London (2009-2012) and Consul General for Pakistan in Toronto (2012-2014), as well as various diplomatic assignments in Abu Dhabi (1992-1996), Jakarta (1999-2001), and Bangkok (2001-2006). He was also Pakistan's Representative to UNESCAP, Bangkok.

At the Ministry of Foreign Affairs in Islamabad, he held important senior positions, including Additional Foreign Spokesperson/ Secretary, Director General for South Asia and SAARC, and Director General for Europe. Most recently after his retirement from the Foreign Services of Pakistan, he was appointed by the President of Islamic Republic of Pakistan as Member Federal Public Service Commission (FPSC) of Pakistan (November 2020 – October 2022).

### Events and International Observances

#### COMSATS' Mental Health Advocacy Event Targets SDG3

On 25th October 2022, COMSATS, in collaboration with Faculty Development Academy (FDA) of COMSATS University Islamabad (CUI), Islamabad, organized a Workshop on "Engaging University Faculty for Mental Health Wellbeing of Youth". Addressing the need to focus more on the achievement of SDG 3 and its targets that include mental health wellbeing, the event was continuation of the initiative undertaken last year to observe World Mental Health Day. Held at CUI, Islamabad, the half day workshop had physical participation of around 50 faculty members belonging to different universities in Islamabad, as well as Wah and Attock campuses of CUI.

In his welcome address, Mr. Laeeq Hassan Jaswal, In-charge FDA-CUI, shared concern over growing trends of mental illnesses. He especially mentioned the turmoil caused by the un-controlled use of social-media and digital gadgets in young generation which are causing various behavioral disorders not only in young generation but in overall population. He hoped to address some aspects of the same through the current focused event.







During the two technical sessions, the main resource person of the event, Ms. Sidra Akhtar, Chairperson, Foundation Drug Psychological Rehabilitation Centre, Islamabad, developed a general understanding on health and mental health, and held group activities among the participating faculty to instill good communication practices to help develop better insight on behavioral and mental health issues of students. She highlighted interdependence of physical and mental health by citing recent researches and some facts on mental health and identified common disorders in young generation and their possible reasons. Some issues identified during these sessions, inter alia, pertained to: faculty members developing keen observation, increase in healthy interaction through useful expressions and discussions to

overcome the communication gap with students. In conclusion, she encouraged everyone to help and to start with themselves to ensure access to positive, safe and healthy environment for all, especially youth.

The participants took keen interest in the interactive session by asking pertinent questions and sharing concerns as mentors, as well as shared their own views and experiences related to students' mental health. Ms. Sidra concluded the session by highlighting the consequences of students' mental illness on University's environment and stressing that the administration and policy makers should take due and timely actions in this regard.

The event concluded with keynote from Dr. Fareed A. Minhas, the renowned

Psychiatrist of Pakistan. Dr. Minhas not only stressed upon the significance of the need for ensuring mental wellbeing but also shed light on the social stigmas attached that hamper mental recovery. He highlighted various related aspects through a case-study. Dr. Minhas also addressed the queries from the audience and appreciated the efforts and initiatives taken by the organizing partners to highlight mental health and wellbeing. "Such events are necessary for mental health advocacy, as the awareness in local population related to mental illnesses is next to zero", he said.

Closing the event, Dr. Azeema Fareed, Additional Director – Health, COMSATS Secretariat, thanked the Chief Guest and the organizers, as well as the participants to help achieve the objectives of the activity.





## CCIB Workshop on Green Biomufacturing

From the platform of the COMSATS Joint Centre for Industrial Biotechnology (CCIB), the Tianjin Institute of Industrial Biotechnology (TIB), China, in collaboration with COMSATS, organized an online workshop on 'Green Biomanufacturing of Bio-based Chemicals', on 28th October 2022. The workshop was held under CCIB's Joint R&D Group (JRDG) on 'Bio-chemicals' with the aim of promoting dialogue among scientists and enterprises to explore potential cooperation opportunities, particularly joint R&D and industrial collaboration on bio-based chemicals.

The workshop featured two key-note speeches by subject-experts from Japan and Germany, and four talks/lectures by experts from China and Thailand, with online participation of over 150 scientists, researchers and academics from around the world.

Prof. Dr. Jibin Sun, Director of CCIB and Deputy Director-General of TIB, opened the event and extended a warm welcome to the subject experts and participants. He thanked COMSATS for its collaboration and support for holding this workshop. Prof. Sun noted that biomanufacturing of bio-based chemicals using renewable resources, is an essential technical approach for addressing the current energy

and environmental concerns, and therefore use of one-carbon molecules, marine biomass, and agricultural biomass as substrates for chemical biomanufacturing is receiving a lot of attention. Prof. Sun considered biomanufacturing of chemicals a significant area of scientific research and a new paradigm for environment-friendly and low-carbon industrial development. Prof. Sun expressed pleasure on CCIB's initiatives to strengthen industrial biotechnology capabilities in COMSATS' Member States and Belt and Road countries.

In his opening remarks, Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council, paid gratitude to TIB for holding this important event from the platform of CCIB. He also welcomed the distinguished experts and participants. Prof. Shaalan stated that chemicals and materials from various biomass sources play important role in reducing our dependence on non-renewable resources. He noted that trees, plants, crops, algae, bacteria and biological waste can be used in different shapes and forms to produce a wide range of bio-based chemicals, fuels, products and intermediates. Prof. Shaalan further noted that bio-based chemical industry has become increasingly profitable, and is ready to take over a large share of the market and opined that the continued development of bio-based chemicals

will lead to new feedstock demands, new technology development and new economic opportunities.

A keynote speech entitled 'Bio-digital Fusion to Establish Biofoundry Technology for Rapid Development of Microbial Cell Factories' was delivered by Prof. Akihiko Kondo, School of Science, Technology and Innovation, Kobe University, Japan. During his presentation, Dr. Kondo noted that the two areas of biotechnology, i.e., engineering biology and bio-foundry, are advancing towards 'bio-revolution' in terms of DNA sequencing, genome engineering, IT/AI technologies, and laboratory automation. Prof. Kondo discussed the design, construction, and testing procedures for bio-foundry platforms, including the construction of genetic components, genome editing, DNA synthesis, and LC-MS analysis accuracy. It was informed that Kondo University also set up a bio-foundry platform that conducts designing, building, and testing procedures and helps produce nanobodies using pichia yeast. Prof. Kondo also highlighted work of different start-ups affiliated with Kobe University, including Bio-Palette, Synplogen, Bacchus Bio Innovation, and others.

The second keynote speech titled 'Synthetic and Systems Metabolic Engineering of *Corynebacterium Glutamicum* for Bioprocesses: a Focus



on Nitrogen', was delivered by Prof. Volker F. Wendisch, Chair, Genetics of Prokaryotes, Faculty of Biology, Bielefeld University, Germany. The speech covered various topics, including synthetic biology and its access to nitrogenous products; functionalizing amines including halogenation of amines (7-Cl/Br-indole and 7-Cl/Br-Truptyamine), N-alkylated amines (reductive alkylamination, intercepting methylamine catabolism, and SAM-dependent), Hydroxylation of amines, L-carnitine production, L-carnitine biosensor, astxanthin, aquaculture sidestream, etc.

The second keynote was followed by a presentation titled 'Application of Synthetic Microbial Consortia for Biochemicals Production from Renewable Resources', given by Prof. Fengxue Xin Nanjing, Tech University, China. He shed light on the advantage of Microbial Consortia in Bio-refinery, advances for synthetic microbial consortium, consolidated bioprocessing, domestic microbial consortia, design of efficient microbial consortia, improvement of lignocellulose conversion efficiency, identification of core function strains, Butanol production from Corn cob, Lactic acid production from Corn cob, chemical production from lignocellulose, application of 3D

printing of Biocatalytic living materials, etc.

Prof. Verawat Champreda, Director, Biorefinery and Bioproduct Technology Research Group, National Center for Genetic Engineering and Biotechnology (BIOTEC), Thailand, delivered a presentation titled 'Integrated Utilization of Fractionated Sugarcane Waste to Biochemical by Enzymatic and Microbial Conversion'. During his presentation, he explained the Bio-Circular-Green Economy (BCG) and how the sugarcane, cassava, palm oil, petroleum, and plastic industries etc, are transformed into biorefineries.

Prof. Shuang Li, School of Biology and Biological Engineering, South China University of Technology, China, delivered a presentation titled 'Efficient Production of Sesquiterpenoid Valencene Using Blue-carbon of Mannitol as Substrate in *Saccharomyces Cerevisiae*'. He shed light on aspects related to dry matter and carbohydrate composition of brown macroalgae, microbial cell factory, crabtree effect, mannitol, valence nootkatone, valence production by *S. cerevisiae*, etc. She also discussed the effective manufacturing of valence nootkatone utilising a *S. cerevisiae* cell factory from mannitol/ brown algae. Prof. Li also explained the two-step adaptive laboratory evaluation,

hexanediamine, succinic acid, and aminocaproic acid.

Prof. Yu Wang, TIB, who is also Coordinator of CCIB JRDGroup on 'Biochemicals', delivered a presentation on the 'Development of Genome Editing Technologies for Construction of Microbial Strains for Biochemical Production', during which various topics, including biomanufacturing of chemicals from non-food resources; development of 'CHIP' through biomanufacturing; genome editing; *C. glutamicum*; CRISPR/Cas-9 based gene editing method; microbial combinatorial inactivation of multiple genes; base editing; genome engineering based strain development, etc., were discussed. Discussing future activities, the Research Group, he emphasized on demand-driven collaborative research from member countries having applications in a number of fields, such as industry, agriculture, environment, health, etc. In this regard, Prof. Wang also informed the participants about the challenges that the biochemical industry is currently experiencing. The technical session was followed by discussion sessions which include interesting question-and-answer session pertinent to the events' theme.

## International Cooperation and Outreach

### Islamic Organization for Food Security (IOFS), Kazakhstan

On 12th September 2022, a two-member delegation of the Islamic Organization for Food Security (IOFS), Kazakhstan, visited COMSATS Secretariat for a meeting to initiate and discuss prospects of cooperation for climate-resilient agrifood systems transformation in common Member States of COMSATS and IOFS. The visiting delegation comprised of Dr. Ismail Abdelhamid, Director of





Programmes & Projects Office, and Mr. Abdula Manafi Mutualo, Senior Liaison Officer of IOFS.

Welcoming the delegation, Mr. Irfan Hayee, Incharge/ Additional Director Programmes at COMSATS, briefed the delegates about COMSATS' role and mandate, as well as its on-going programmes and activities. He highlighted the initiatives taken by COMSATS in a number of areas including climate change, sustainable agriculture development and food security.

Introducing his organization, Dr. Abdelhamid provided a brief overview of IOFS' upcoming activities aimed at increasing agriculture productivity and promoting sustainable agriculture development in its Member Countries through utilizing appropriate technology and scaling-up of funding mechanism and investments. Mr. Manafi added that IOFS is operating under its recently adopted ten-year Strategic Vision 2031, which was approved by the 4th General Assembly in September 2021. He further informed that IOFS is undertaking initiatives relating to its five pillars: Governance Enablement, Food Crises Response, Capacity Building, Industrial Development, and Recourse Mobilization.

During the meeting, both sides agreed on developing a collaborative work plan and initiate coordinated programmes between CCCS and IOFS focusing on joint capacity-building in common Member States; making digitalization for Climate-Smart Agriculture (CSA) a focus area; undertaking collective efforts for mobilization of Climate financing; as well as setting-up a working group to further explore areas of closer cooperation and reinforcing each other's efforts towards combating climate change and global food insecurity. The meeting led to signing of a cooperative agreement.

On 5th October 2022, the two organizations signed a Memorandum of Understanding with the aim of contributing towards strengthening capacities of both organizations' Member States in Climate Smart Agriculture to ensure sustainability targets relating to food security and resilient livelihoods. The MoU was signed by the Executive Director COMSATS, Dr. Ghulam Muhammad Memon, and the Director General of IOFS, H.E. Yerlan Alimzhanuly Baidaulet, on behalf of their organizations.

The agreement provides a framework for strengthening cooperation towards the sustainable development of projects on agriculture and food security, with

a focus on climate-smart technologies and practices. Under the MoU, both organisations will, inter alia, jointly pursue training and research activities related to climate change, agriculture and rural development policies, innovation, and social development, such as food security and health, utilizing South-South and Triangular cooperation.

### **National Flood Response & Coordination Centre (NFRCC)**

In response to unprecedented floods of June July 2022, Government of Pakistan established National Flood Response & Coordination Centre (NFRCC) as a platform for bringing together coalitions for quick rescue and rehabilitation response serving as national nerve centre by the Government to deal with the humanitarian and climate crisis the floods resulted in. In this regards, a proposal was submitted earlier by COMSATS to Pakistan's Ministry of National Health Services Regulation and Coordination (NHSR&C).

A meeting was held on 10th October 2022 with COMSATS' officials to assess COMSATS' proposal on "Providing Accessible Primary Healthcare to Flood Affected Communities through a Telehealth System". Drawing upon the experience and expertise of COMSATS Telehealth (CTH), COMSATS' proposed project aims to support flood relief activities in the country in collaboration with government agencies, including NFRCC.

The visiting officials of COMSATS were Dr. Azeema Fareed (Additional Director, Health/ In-charge, Telehealth); Mr. Irfan Hayee (Additional Director/ In-charge, Programmes); and Mr. Nisar Ahmad (Additional Director/ In-charge, Systems) who held a meeting with Brigadier Omer Khursheed (Director IT, NFRCC) and Ms. Ayesha Humera (Executive Director, National Information

Technology Board – NITB).

During the meeting, officials of NFRCC were briefed about COMSATS and its ongoing projects, especially the Telehealth programme, which is operational from COMSATS Internet Services (CIS). Taking keen interest in the mode of services delivery of CTH, NFRCC officials requested COMSATS for a demo to be presented in the follow-up meeting. COMSATS' team was also encouraged to share the details of the concept note through a multimedia presentation covering project's scope, features and functionalities along with its application in the current disaster management interventions and future roadmap.

The follow-up meeting that took place on 11th October 2022 also had the presence of Dr. Rabail Javed from Ministry of NHR&C. Dr. Azeema Fareed gave a live demonstration of COMSATS Telehealth model during which Dr. Nadia Rasheed (Project Manager, Telehealth – CIS) present at Telehealth Resource Centre at CIS connected with four BHU tele-clinics in Balochistan. NFRCC officials observed the tele-consultation process and asked questions about various aspects of the online healthcare system.

The meeting concluded with a pledge to explore further avenues of cooperation in the field of health to help flood affected people of Pakistan. NFRCC's team was also invited to pay a visit to Telehealth Resource Centre.

### United Nations Office for South-South Cooperation (UNOSSC)

The United Nations Office for South-South Cooperation (UNOSSC), in collaboration with its Member States, UN agencies, and other development partners, brings out a publication titled 'Good Practices in South-South and Triangular Cooperation for Sustainable



Development'. The publication features initiatives that contribute to the achievement of SDGs, while illustrating the central tenets of effective South-South and triangular cooperation. COMSATS Joint Centre for Industrial Biotechnology (CCIB) was selected for inclusion in the Vol. 4 of the publication that was launched at the United Nations Day on South-South Cooperation and at the occasion of the Global South-South Development (GSSD) Expo 2022 (Bangkok, 12-14 September 2022). (<https://unsouthsouth.org/2022/08/31/good-practices-in-south-south-and-triangular-cooperation-for-sustainable-development-vol-4-2022/>).

Launched in April 2021 at COMSATS' Centre in China – the Tianjin Institute of Industrial Biotechnology (TIB) of Chinese Academy of Sciences (CAS) – under the framework of the National Center of Technology Innovation for Synthetic Biology (NC SynBio) of China, the Centre aims to promote meaningful cooperation among developing countries in industrial biotechnology. CCIB, with robust support of NC SynBio, has so far initiated five high-level joint R&D projects involving over 10 research teams from the Member States;

supported 14 young visiting scholars; published four Science Citation Index (SCI) papers; and applied two patents.

CCIB has also significantly contributed towards capacity-building of the Member States by holding four online workshops in the areas of bio-medicine, bio-agriculture, bio-energy and bio-materials, as well as a ten-day training course covering diverse frontier technologies in synthetic biology and biotechnology.

### Participation in Fora

#### Second Innovative Healthcare Technologies Summit

Dr. Azeema Fareed, Additional Director (Health) at COMSATS Secretariat and In-charge-COMSATS Telehealth (CTH) participated in "2nd Innovative Healthcare Technologies Summit", jointly organized by the Federation of Islamic Medical Association (FIMA) and Pakistan Islamic Medical Association (PIMA), on 26th October 2022. The summit was held at the premises of Allama Iqbal Open University (AIU), Islamabad. It was focused on the theme "Technology as a Cross-cutting Tool" for achieving SDG3 (Good Health and Wellbeing), in particular its sub target on universal health coverage (UHC).

The event had the participation of learners and experts belonging to the fields of health, medical research, software and computer engineering, computational biology, and the health-tech companies. The efforts and projects presented by the participants revolved around innovative and tech-driven healthcare solutions through the use of nanotechnology, artificial intelligence (AI), and information and communication technologies (ICTs) to broaden the scope for qualitative healthcare and also for health education and awareness. Besides advocacy for



tech-based health solutions, the event also featured discussions on future aspects of medical research supported by Tech-driven solutions.

Dr. Fareed participated in the summit as a panelist and also presented COMSATS' contribution in UHC through its telehealth services over the years. She shared with the participants the background, method, and expertise of their services delivery of CTH since 2001 and also informed them about Telehealth clinics in Balochistan, Pakistan. Further, she also highlighted strengths of CTH in terms of patients' satisfaction, mode of services delivery, especially in maternal and child healthcare (MNCH).

The participants appreciated the efforts of COMSATS for the quality primary healthcare to the marginalized population of Pakistan. They also lauded the online services being provided by COMSATS in MNCH, which is one of the key problems of the underserved communities of Pakistan. The event served as an effective forum to learn about latest research and development in Digital Health and Tele-medicine, networking for collaborations aimed at such R&D

sector and promotions and marketing of startups and other initiatives in the field of health.

Many technology-driven healthcare smart and affordable solutions/ projects were also showcased as well as presented by the young brains that included the robotic hand, vital signs monitor, AI based pathology cameras and online healthcare systems, which gave hope for the future of tech-driven healthcare in Pakistan. Moreover, the challenges and needs related to data-centralization, need for robust interdisciplinary research, and lags in healthcare policies on government level were also a part of discussions during the summit.

### **Third Inter-Parliamentary Union Regional Seminar**

COMSATS Secretariat participated in the inaugural and closing sessions of the 3rd Inter-Parliamentary Union (IPU) Regional Seminar on Achieving Sustainable Development Goals for Parliaments of Asia-Pacific held at the Parliament House, Islamabad, Pakistan. The session was attended by the Parliamentarians from the IPU member states from the Asia Pacific

Region, Representatives of National, International, IGO and United Nations Agencies who are working to achieve Sustainable Development.

The event featured talks and deliberation from prominent figures working in SDGs and parliamentary affairs, including Ms. Romina Khurshid Alam, Convener, National Parliamentary Task Force on SDGs; Mr. Duarte Pacheco, President, Inter-Parliamentary Union (IPU) and Member of Parliament in Portugal; and Raja Pervaiz Ashraf, Speaker National Assembly of Pakistan.

Participating from COMSATS Secretariat, Engr. Qaiser Nawab, Assistant Director (Programmes), introduced COMSATS as an intergovernmental organization working in the Global South to realize the achievement of Sustainable Development through Science, Technology and Innovation. Interactions with Her Excellency Ms. Nguyen Thanh Cam, Member of the Standing Committee for Social Affairs of National Assembly of Vietnam; and His Excellency Mr. Shahin ISMAYILOV, Member Parliament of Azerbaijan resulted in exchanges on issues of mutual interest.



## SPECIAL SECTION: COMSATS' EVENT CLIMATE DIPLOMACY TO MARK UNITED NATIONS SOUTH-SOUTH COOPERATION DAY 2022

To observe this year's United Nations Day for South-South Cooperation (12 September 2022), COMSATS brought together institutions and individuals from development sector, diplomatic community, inter-governmental organisations, and academic and R&D institutions to foster discussions and encourage debates on issues pertinent to climate change and explore its dimensions related to Climate Diplomacy, including Democracy and South-South Cooperation, fostering climate change advocacy; nexus between climate change, policy and multilateral diplomacy; climate-related security risks; and role of climate finance for effective climate diplomacy. The webinar entitled "South-South Cooperation and Climate Diplomacy" was organized under the premise of COMSATS Centre for Climate and Sustainability (CCCS), on 21st September 2022.

The event brought in perspectives on key topics from African Climate Foundation (ACF), South Africa; Islamabad Centre for Regional Studies (ICRS), Pakistan; South Centre, Switzerland; The World Academy of Sciences (TWAS), Italy; Islamic Organization for Food Security (IOFS), Kazakhstan; International Centre for Climate and Environmental Science (ICCES), China; and Islamic Development Bank (IsDB), KSA.

The interim Executive Director COMSATS, Dr. Muhammad Ghulam Memon (Federal Secretary, Ministry of Science and Technology, Government of Pakistan), opened the event with a welcome note. Dr. Memon considered it high time for governments to address climate security vulnerabilities and focus on strategic climate action, especially those aimed toward and from within developing countries who are most vulnerable in this regard and

have fewer coping mechanisms. He urged for stronger climate diplomacy and international cooperation aimed towards decarbonisation and environment friendly developments during this decade and considered recognition of diverse national situations and capacities important in this regard. He highlighted COMSATS' strong role in raising awareness on key related issues and presented COMSATS Centre for Climate & Sustainability (CCCS) and important initiative for shaping the organization's interventions towards climate action and other related Sustainable Development Goals.

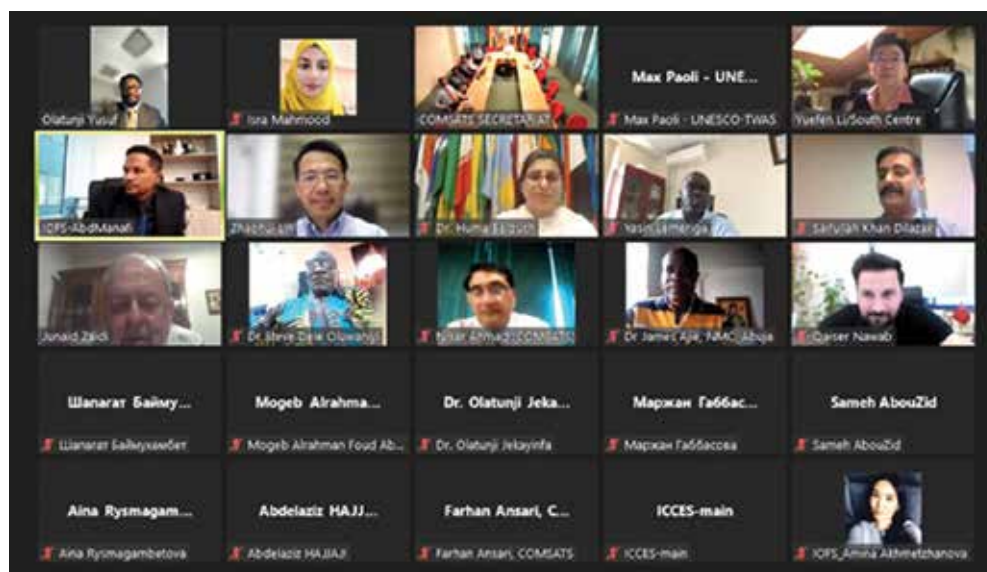
The technical talks commenced with that of Dr. Saliem Fakir, Executive Director ACF, who noted that the fruitful outcomes of the global climate debate would be building the narrative around economic resilience and enhancing global political governance in this regard. He noted that climate-related challenges can further weaken the economic systems already battered by recent crises, including COVID-19 pandemic. Highlighting the impact of extreme weather events on South Africa and Pakistan, he stated that economies depending solely on natural resources

are particularly susceptible to the effects of past and present climatic events.

Ambassador (R) Fauzia Nasreen, President ICRS, delineated the multifaceted nature of security issues resulting from the varied effects of changing climate, including human and community health, food and water security, and economic and national security. According to her, the existing socio-economic and environmental challenges posed by climate change hinder adequate and efficient implementation of developmental policies. (Full talk on Page 11).

In her talk, Mrs. Yuefen LI, Senior Adviser on South-South Cooperation and Development Finance, South Centre, emphasized the need for a collective response for addressing the global issue of climate change and considered advocacy at the local community level an effective tool in aiding such coordinated response. She highlighted the need for evidence-based advocacy campaigns.

Dr. Massimo Paoli, Programme Coordinator for Sustainable Development and Capacity Building,





TWAS, highlighted low levels of awareness on causes and consequences of climate change on facts such as the amount of carbon dioxide in the atmosphere has increased from 280 to 416 P.P.M after the 4th industrial revolution. He stressed that it is crucial to have a clear understanding of individual responsibility to environmental sustainability that also requires change in habits, research streams and preferences, technologies and innovations, economic decisions, and investments.

Mr. Abdula Manafi Mutualo, Senior Liaison Officer at IOFS, Kazakhstan, provided an overview of the activities carried out by IOFS to address climate change in its member countries. These included: governance enablement, food crisis response, capacity-building, industry development, and resource mobilization.

Prof. Dr. Lin Zhaohui, Director ICCES, shared information on China's plan for climate change mitigation. According to this plan, China is expected to become climate neutral by 2060 and is moving towards clean and low-carbon technologies. He also shed light on how software, supercomputers, and regional climate models play a part in predicting the future of climate based on simulations, hence affording the policy makers, technologists and innovators crucial information for evidence-based decision making.

Mr. Olatunji Yusuf, Senior Climate Change Specialist at IsDB, provided information on the Bank's experience in addressing climate change through initiatives on accelerating rehabilitation, combating poverty, strengthening resilience, and promoting green economic development. In this regard, it was informed that IsDB is focusing

on social and urban infrastructure development, climate-smart agriculture, renewable energy technologies, transportation, universal health and education, food security, livelihoods for resilience, climate finance, capacity-building, and youth and women participation for green economic growth.

Subsequent to the talks, Ambassador (R) Nasreen moderated a discussion session based on several viewpoints that touched upon different aspects of the earlier talks: the role or importance of regional climate adaptation agenda in integrating climate change adaptation into national and regional economic and development policies; incorporation of grassroots and middle level actors in formulation of negotiating strategies; role of G20 in potentially creating a mechanism for South-South climate financing; and segregated, multilayer approach to Climate Diplomacy.

Emphasising the effectiveness of advanced prediction or model system, the panelists pointed out that the climate, weather, food and water system will experience enormous changes in the coming years as a result of both rapid advances in science and technology as well as a rapidly shifting landscape of stakeholders with rapidly changing responsibilities and capabilities. They also emphasised that international donors and IGOs must play a pivotal role in assisting governments of developing countries towards integrating climate change resilience-building in their development agendas and policies.

The event attracted participation from diplomatic community and government institutions, including Jamaican Ministry of Science, Energy and Technology and a number of development sector organizations, higher education institutions and research and development organizations.



## Multi-Dimensional Climate-related Security Risks

Amb. (R) Fauzia Nasreen\*

South-South and Triangular cooperation has assumed importance for combating climate change. Climate has also emerged as a core subject for statecraft and diplomacy as "foreign policy is climate policy".\* Therefore, clubbing the two together reflects the need of the present times.

The global situation on combating climate change does not look promising. The wedge between the developed and the developing countries seems to have widened due to several factors. The disruptions caused by three years of COVID-19 pandemic and lately the war in Europe resulting in energy and food shortages, the world is in economic stress. More importantly, given the extreme weather conditions and changing patterns of climatic conditions, quest for climate justice is becoming stronger. Regrettably, geo-politics is once again driving the environment related responses. The will for collective action, solidarity and commitment on at least the principle that the developed world would take responsibility and assist developing countries on adaptation and mitigation has weakened.

In the last few months, parts of Asia and Africa have been inundated due to unprecedented rainfall and floods. Severe droughts in some regions of both Asia and Africa have posed serious challenges. The survival,

\* *adelphi and Wilson Centre Report '21st Century Diplomacy: Foreign Policy is Climate Policy'*

livelihoods and food security issues for many communities are in a precarious situation. The impacts are compounded by glacial melt affecting the mountain communities and those living in the drain areas as well as sea level rise is disrupting the age old habitats both for human and wild life. The island countries are particularly concerned about the physical survival of their states as the fear of submerging of the Island states present a real threat. For them, the task of adaptation, mitigation and potential transition becomes even more problematic due to resource constraints, lack of expertise and non-availability of the requisite technology

During the last several decades, perspectives on security have undergone considerable change. Its widened concept places an equal emphasis on risks that impair socio-political and socio-economic stability. These risks more importantly, pose existential threat to the planet, its environment, ecosystem and biosphere. Consequently, comprehensive security considers climate change and related risk to human security as vital areas of concern.

At the international level, the United Nations has acknowledged that climate change increases vulnerability, threatens food security and human health, negates development, induces migration and competition for natural resources, and could result in loss of land causing permanent displacements and in some cases making people stateless. These

conditions can lead to conflict. A widely held view is that the multidimensional climate related security risks must be seen from the overall lens of peace and security.

Among the issues identified under the rubric of climate-induced security risks, conflict and violence have been highlighted as a threat having far reaching consequences. Scarcity of resources, in particular water and food, results in migration and people moving to safer areas and greener pastures. The shift to urban areas has a bearing on the crime rate and criminal networks start operating burdening the state law enforcement apparatus posing complex governance challenges. In some countries, militias have posed a serious problem making the state structures weak. It leads to creation of circumstances where regional conflict complex provides a ground for inter-state conflictual situation.

It is generally observed that multiple and multifaceted effects of climate change accentuate where there are pre-existing challenges in social, economic, environmental and other areas at different levels. Such conditions make policy formulation and response mechanism more complex. The experts, therefore, suggest an integrated approach within the context of identified threats as a solution. Such an approach assumes greater significance when dealing with communities and regions that suffer from persistent poverty,



\* Ms. Fauzia Nasreen is former diplomat with an extensive experience as a practitioner of diplomacy, researcher, trainer and manager. Her areas of expertise are public policy, policy analysis, peace and conflict resolution and defence and strategic issues. Previously, she has served in various capacities in a number of missions. She has been ambassador of Pakistan to Nepal and Poland and High Commissioner for Australia. Ms. Nasreen has also been teaching as visiting faculty at prestigious higher education institutes of Pakistan. She has recently been looking after the SDGs wing of COMSATS Secretariat as Advisor. Email: [fnasreen2013@gmail.com](mailto:fnasreen2013@gmail.com)





hunger and disease, resource scarcity, changing weather patterns and virtually non-existent infrastructure.

Within the discourse on multidimensional climate-related security risks, economic conditions and wellbeing of individuals, communities, states and global community acquires urgent relevance. The economic disruptions at the macro level can have negative impact on growth, trade, transportation, supply chains and international financial stability. The global food shortage is spiraling into calamitous spell of development challenges and adversely affecting the achievement of Sustainable Development Goals as per the targets.

As has been witnessed in the last one year or so, the frequency of wildfires, floods, erratic weather patterns, melting of glaciers and sea level rise has increased the level of risks confronted by the world. The cross-cutting debilitating impacts erode the resilience and capacity to comprehensively deal with the consequences. The colossal damage caused due to the recent multiple climate related effects in Pakistan is a case in point.

Pakistan contributes less than 1% and so do most countries in Africa, to global emissions but is the 8th most affected country. Because of the unprecedented rainfall this monsoon, 65-75% more intense, 33 million people are severely at risk having lost their assets, livelihoods and livestock. One third of the country is under water, though has started receding, people in these

areas have been constrained to leave their damaged and inundated homes and take temporary refuge in higher places. The damage to agriculture and sweeping away of standing crops has virtually destroyed the food basket of Pakistan. Due to lack of hygiene and consequent health and medical hazards, along with hunger and disease, is posing a severe challenge for the people and the authorities. UNICEF has estimated that 16 M children have been hit by the floods.

The melting of glaciers in the North and sea-level rise in the South impose a double whammy. The United Nations Secretary General who recently visited Pakistan to express solidarity with the government and people termed what he saw as effects of "monsoon steroids". According to World Weather Attribution (WWA) – an international metrological group – there is convincing evidence to support the argument that Climate Change exacerbated the recent devastating floods in Pakistan. The National Disaster Management Authority of Pakistan (NDMA) has also reinforced the fact that the unprecedented floods triggered by record monsoon rains and glacial melt in northern areas have severely damaged Pakistan in different ways. The effects of what has happened this year and as predicted would become a regular feature, will have grave long term impact on the country. The fragility and development deficit in certain regions would likely pose challenges nationally, regionally and globally within the framework of multidimensional climate-related security risks.

Pakistan has mobilized all its resources at the government level, military is carrying out the biggest rescue and relief operation. The people and various NGOs are making exceptional efforts in reaching out to the people. International community has also stepped in a big way in augmenting the efforts by the foreign governments, INGOs and the UN organizations. However, the task of resettling those displaced and their rehabilitation will be a long term and arduous undertaking. The initial loss has been estimated at US\$30 billion. This is where the role of the existing climate mitigation structures and mechanisms will be crucial.

Calls for climate justice are growing with quest for reparation and compensation. Developing countries need to put forward \$100 billion annual contribution as promised in the Paris Agreement. In partnership with Pakistan, technical support for putting up a smart integrated approach would be helpful. The climate disaster in Pakistan can become a model case-study that could help in identifying risks, devising a sound policy and workable strategies. Experts in the field should guide Pakistan in preparing and implementing a viable adaptation and mitigation plan. This indeed is a situation of multidimensional climate-related security risk. Serious thoughts should be given to the increasing consequences of climate change and survival of a habitable planet.

In this backdrop, the countries of the South need to pool their knowledge, benefitting also from the indigenous and traditional ways of protecting against extreme weather conditions and for dealing with climate disasters. Sharing of Research, Development and Innovation both in relation to South-South and Triangular cooperation would be helpful. If workable transition solutions are to be employed, technology transfer remains pivotal which could be country and region specific and grounded in the local context.

## SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

### ICCES-China Holds Conference on Innovations in Agriculture

The International Centre for Climate and Environment Sciences (ICCES), China, co-organized an International Conference on "Innovations in Agriculture to Ensure Food Security in Changing Climate" from 23rd to 25th August 2022. The Conference was held in collaboration with the Islamia University of Bahawalpur (IUB), Bahawalpur – Pakistan, and National Disaster Risk Management Fund (NDRMF), Pakistan and had the patronage of Pakistan Science Foundation (PSF), Islamabad – Pakistan.

The Conference was aimed at emphasizing the importance of science and technology for agricultural industry to ensure food security in the wake of changing climate, as well as to raise awareness on S&T collaboration in developing countries in the field of agriculture.

Prof. Zhaohui LIN, Director of ICCES, delivered keynote speech on "Drought variation and its impact on major cereal yield: case study of Nepal". He emphasized the need for climate modeling and international collaboration for combating climate change in developing countries. He also discussed how changing climate leads to frequent weather extremes severely damaging the global agricultural industry and leading to food insecurity.

More than 100 scientists, researchers, students, policy makers and farmers from China, Pakistan, Saudi Arabia, Turkey, Germany, Thailand, South Korea, Peru, Bangladesh and Nigeria participated in the Conference. Experts from China, Pakistan, USA, Thailand, Canada, Brazil, Germany, and Turkey participated as speakers, shared their experiences, and discussed sustainable strategies, innovations, tools and skills

for achieving sustainable agriculture in changing climate.

### Commercialization of Al-Farabi KazNU-Kazakhstan's Scientific Projects

Al-Farabi Kazakh National University (KazNU), Kazakhstan, hosted a meeting with representatives of the China International Technology Transfer Center (CITTC) of the member states of the Shanghai Cooperation Organization (SCO), China.

During the event a presentation on the R&D commercialization projects of KazNU was made, showcasing some of KazNU researchers' achievements, including: creation of small-scale production of hardware and software complexes for studying electromagnetic phenomena in a physics course; complex automation of higher educational institutions, introduction of digital services; organization of small-scale production of energy-saving gas-discharge lamps with increased the intensity of the glow; organization of production of carbon nanostructured materials; production of innovative small spacecraft for educational institutions; advanced iBox – a platform for universal virtual agent devices; mobile apps, panoramic 3D tours, interactive maps and QR codes.

The participants of the meeting discussed possibilities for further cooperation, attracting investments, as well as prospects for KazNU's scientists of entering the Chinese market with products, goods, works, services and technologies.

### Collaborations of Al-Farabi KazNU-Kazakhstan

Within the framework of the Kazakh-Qatari Investment Forum in Astana, a Memorandum of Understanding was signed between Al-Farabi KazNU-Kazakhstan and Qatar University. The accord was signed by Dr. Prof. Zhanseit Tuymebayev, Rector of Al-Farabi KazNU, and Dr. Hassan Rashid Al-Derham, President of Qatar University. The areas of cooperation include: exchange of experience, information, results of scientific research, and statistical data; joint publication of materials, research, conferences, meetings and trainings, among others.

Al-Farabi KazNU-Kazakhstan has signed a Memorandum of Cooperation with the State Islamic University of Sultan Syarif Kasim, Indonesia. The cooperation between the two sides includes: exchange of university staff and teachers; organization of advanced training courses for the teaching staff; development and implementation of joint educational programmes,







including double diploma programmes; organization of academic meetings and symposiums; and joint research activities.

### Ranking of Al-Farabi KazNU-Kazakhstan

According to the results of the international university ranking "IAAR Eurasian University Ranking (EUR) 2022", conducted by the Independent Agency for Accreditation and Rating (IAAR), Al-Farabi KazNU-Kazakhstan was recognized as the best university among universities in Kazakhstan, Russia, Kyrgyzstan, Belarus, Ukraine, Azerbaijan and Moldova. The IAAF EUR rating evaluates the competitiveness of universities according to the latest global trends.

### Progress of TÜBİTAK-ULAKBİM's EuroCC Project

The Turkish Academic Network and Information Centre (ULAKBİM) of TÜBİTAK, Türkiye, is successfully conducting the project EuroCC - National Competence Centres under the framework of EuroHPC. During the reporting period, the following activities were organized within the scope of the Project to increase awareness in the fields of High-Performance Computing (HPC), Big Data, and Artificial Intelligence, as well as to share experiences and advantages of using HPC at the national level.

- Workshop on 'Wind Energy Computational Analyzes' (September 21, 2022).

- Online 'Basic Cyber Security Training' (13th – 14th October 2022).

### TÜBİTAK MAM-Türkiye Opens Pistachio Processing Plant

Under Türkiye's Largest Food R&D and Innovation Project – INNOFOOD, a Pilot Scale Pistachio Processing Plant has been established by TÜBİTAK Marmara Research Center Life Sciences Vice Presidency and Gaziantep Commodity Exchange (GTB), Türkiye.

The Plant aims to improve pistachio processing conditions by establishing a scientifically and technologically equipped pilot scale pistachio processing line in Gaziantep; allow processing of pistachio in a sustainable way with the use of high technology instead of traditional methods; increase the interest of industrialists and other institutions in the R&D and hygienic pistachio production; and to constitute a role model in the sector with its R&D services.

The plant has a maximum daily processing capacity of 30 tons of dry red-shelled pistachio, and a product output of 1 ton of roasted pistachio per

*continues on page 17*





## NSQAC Quality Consultation Services

### Royal Scientific Society (RSS), Jordan

The National Centre for Software Quality Assurance (NSQAC) has launched its newly established digital transformation strategic consulting services.

The National Center for Software Quality Assurance, through its strategic consulting services, aims to help institutional decision-makers invest in opportunities, and address challenges posed by technological advances of the Fourth Industrial Revolution.

The team of consultants at NSQAC study the needs of the client, assesses the current situation and shares the essence and secrets of success in the desired consultancy areas through well-designed customized roadmaps to meet client's targets. NSQAC can also partner to help with the implementation.

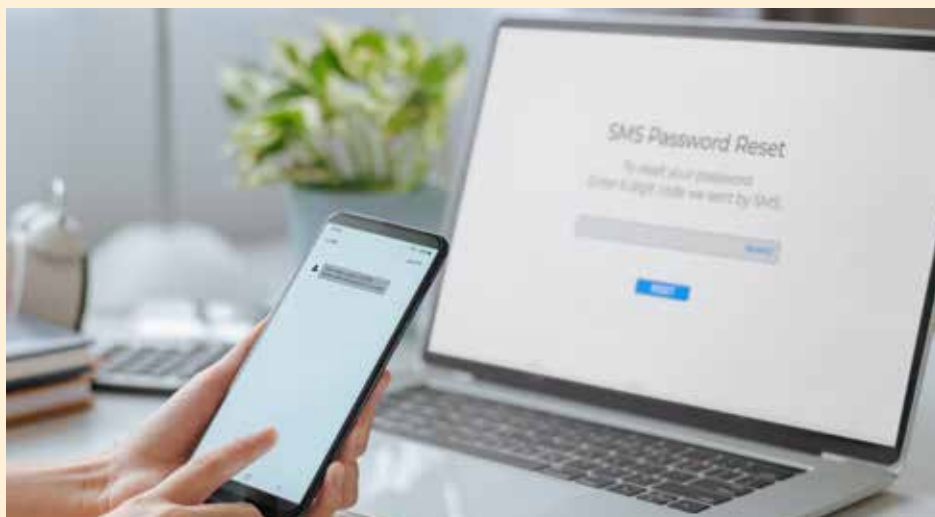
Consultation services include the following.

#### Quality Centre Establishment Consultancy

A solid software testing department is a key element in the success of projects, yet it can be a tough task to establish one or enhance it considering the



Quality Centre Establishment Consultancy



#### Digital Transformation Consultancy

many challenges and competitiveness. Building on its own establishment success story and experience with customers, NSQAC utilizes a harmonized framework of activities to create and run client's quality centre and meet its establishment targets. Our consultation can cover processes definition and refinement, team structure and capacity building, automating processes through recommended tools, and many more.

#### Digital Transformation Consultancy

Digitizing all types of services is a dominating trend in all types of businesses and sectors, yet effective digital transformation can be challenging to reach. Knowing the ins and outs of digital transformation and its success factors, NSQAC accompanies digital transformation journey, from assessing readiness to business mapping and setting strategies, and until suggesting measurements for the effectiveness of the transformed services.

#### Cybersecurity Office Establishment Consultancy

Cybersecurity is a necessity for the integrity of software and sustainability of businesses. Establishing a cybersecurity office in your organization can greatly reduce many risks through professional information security management. NSQAC can professionally assess security management maturity level against international standards like ISO27001, build team capacity, and utilize relevant controls and KPIs.



Cybersecurity Office Establishment Consultancy

## WOMEN IN SCIENCE

# EMPOWERING WOMEN ESSENTIAL FOR IMPROVED CLIMATE RESPONSE BY NEENA BHANDARI

Women possess essential knowledge and skills, particularly at the local level, in the conservation and management of natural resources but have limited say in environmental decision-making, according to a report by UN Women Asia and the Pacific.

The report was published ahead of the 66th Commission on the Status of Women which is focusing on achieving gender equality in the context of climate change, environmental and disaster risk reduction policies and programmes. It says engaging women in these areas is critical to effective climate action.

“Women’s relationship to the environment is different to men’s in several complex but interlocking ways,” says Sarah Knibbs, officer-in-charge at UN Women Asia and the Pacific. “They are more exposed to some of the risks and also have a unique contribution to make to the solutions.”

This connection between gender and the environment is explored in the report, *Women and the Environment: An Asia-Pacific Snapshot*.

“Women in Pacific Island Countries and Territories and indigenous women across the region are key holders of traditional knowledge,” says Sara Duerto Valero, the report’s lead author and regional advisor on gender statistics for UN Women Asia and the Pacific.

“From seasonal planting, to following following practices for land, or even limiting the consumption of certain animals or plants during select seasons, these practices carry important conservation knowledge.”

The report notes that as climate change alters rainfall patterns, it may put access

to safe drinking water at risk and worsen the burden of water collection that largely falls on women. Also, increased severity and frequency of droughts and floods due to climate change may amplify the barriers to using clean cooking fuels, it says.

“Raising women’s wages and dismantling barriers for their participation and decision-making in commercial operations could enable women to maintain their livelihoods and contribute to the sustainable management of these resources”

Sara Duerto Valero, UN Women Asia and the Pacific

Women make up roughly one-third of the workforce in the renewable energy sector globally, overwhelmingly in administrative rather than managerial or technical positions. In agriculture, forestry and fishing, they earn less than men and are overrepresented in lower positions, according to the report.

“Raising women’s wages and

dismantling barriers for their participation and decision-making in commercial operations could enable women to maintain their livelihoods and contribute to the sustainable management of these resources,” Duerto Valero tells SciDev.Net. “In regions such as the Pacific, where women are key holders of traditional knowledge, their access to decision-making positions could be particularly transformational”.

She says women are less likely to own land and productive assets and in turn don’t get to make decisions over these resources. “Evidence from gender-environment surveys, where available, shows that landowners are typically the ones who make decisions regarding pesticide and fertiliser use, as well as regarding the use of sustainable practices for agriculture or animal grazing,” Duerto Valero adds.

The report uses available data from Sustainable Development Goal (SDG) indicators, microdata from standard surveys and geospatial information from



PhotoCredit: UN Women

countries in the Asia Pacific region. Only 23 of the 200 SDG indicators capture the gender-environment nexus.

“Existing globally-agreed indicators are not fit-for-purpose to properly address the gender-environment nexus. A broader set of indicators is necessary,” Duerto Valero tells SciDev.Net.

Women are underrepresented in environment-related government bodies, the private sector and natural resource management groups in the Asia Pacific region. Fewer than one in five countries have a woman minister for the environment or equivalent,

and six per cent have one for fisheries, according to the report.

“Promoting their engagement, for example, in science, technology, engineering and mathematics (STEM) education, energy-related vocational training, sustainable agriculture studies etc. is key to ensuring they can access decision-making positions in private firms and government bodies later in life,” Duerto Valero adds.

“Women are often the first responders in their community,” ActionAid Australia’s executive director, Michelle Higelin, tells SciDev.Net. “Governments

and civil society must prioritise the influence and leadership of diverse women in disaster management and climate change policies. This includes developing initiatives that strengthen women’s participation in decision-making and supporting women-led innovations in regions that are on the frontlines of the climate crisis.”

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**...continued from page 14**

hour and 1 ton of roasted peanut per hour.

### Malaysian Delegation Visits TÜBİTAK-Türkiye

On 26th September 2022, a collaborative meeting was held between TÜBİTAK Marmara Research Center (MAM), Informatics and Information Security Research Center (BİLGEM), National Metrology Institute (UME) and Malaysian Institute of Standards and Industrial Research (SIRIM).

At the meeting, TÜBİTAK MAM,

BİLGEM and UME made promotion and cooperation oriented presentations. After the meeting, the delegation made on-site inspections at TÜBİTAK UME Chemistry Group Laboratories, TÜBİTAK RUTE Robotics Laboratory and Engine Center of Excellence in order to get to know the TÜBİTAK’s infrastructure.

Later, the parties discussed cooperation potentials in pioneering areas, especially in Hydrogen Technologies and Biomass Conversion Technologies and exchanged views on inter-institutional vocational training opportunities.

### Rankings of CUI-Pakistan

COMSATS University Islamabad (CUI), Pakistan, is at first place in Pakistan and 973rd in the World in AD Scientific Index Ranking 2023, which evaluates scientific performance and added value of the scientific productivity of individual scientists. It also provides rankings of institutions based on the scientific characteristics of affiliated scientists.

Moreover, CUI-Pakistan has been ranked at third place in THE WUR 2023 in the category of federally chartered universities of Pakistan.

#### International Visits at CUI-Pakistan

Sr. No.	Date of Visit	Visiting Institution	Purpose of Visit
1.	Sep 01, 2022	Macquarie University, Australia	To explore potential academic and research collaboration between two varsities.
2.	Sep 27, 2022	Western Sydney University, Australia	To explore cooperation in the fields of Business Administration, Computer Sciences, Mathematics, International Relations, Psychology, Linguistics and Literature.
3.	Oct 05, 2022	Plus W, Inc. Japan	To explore cooperation in digital and Information and Communications Technology (ICT).



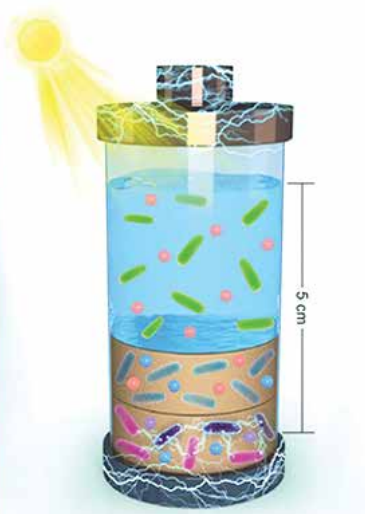


## Seawater Battery Developed by Chinese Scientists

Chinese scientists from China State Key Laboratory of Microbial Resources, Qingdao Institute of Bioenergy and Bioremediation Technology, Tianjin Institute of Industrial Biotechnology, and Chinese Academy of Sciences have been able to generate electricity by combining microbes with seawater (Swords Today; 11th October 2022). This bio-battery can deliver a maximum of 380 microwatts and operate stably for more than a month, making it ideal for ultra-low energy use facilities.

This not only proves that the four-species system is ideal in terms of energy density and stability but also shows that maintaining a complete three-level environmental structure is an efficient way to transform biophotovoltaic learning. Powered solely by solar energy, this bio-battery has the potential to function on Mars as long as water, carbon dioxide and minerals are available.

Currently, the performance of the battery cannot match that of semiconductor photovoltaics, however, it represents a more environmental-friendly and more cost-effective way.



In the research reported in Nature Communication, the team added four species of microbes, including algae, to a device filled with seawater that mimicked the structure of a microbial ecosystem: one species acted as a primary producer, another as primary decomposer and the other two as final consumers. First, the producer organism produces sucrose through photosynthesis. The decomposer then breaks down the sucrose into lactate. Next, the ingesting organisms further break down the lactate generating electricity.

## Zimbabwe Approves WHO's Recommended Anti-HIV Medicine

Zimbabwe has taken several measures for combating HIV-AIDS which has been a daunting a public health challenge for many African countries. Last year, the country launched an ambitious strategic plan to end AIDS by 2030 and has already reached a target – 90-90-90 – 90% of people living with HIV knowing their status; 90% getting antiretroviral treatment; and 90% having the virus suppressed. The country's fight against

HIV has seen a welcome decline in the number of AIDS-related deaths from an estimated 130,000 in 2002 to 20,000 in 2021 (The Guardian; 20th October 2022).

In a recent bid, Zimbabwe has approved an HIV prevention medicine recommended by the World Health Organization (WHO). This step has placed the country on the top of the list in Africa and third in the world in terms of HIV-AIDS response. The long-acting injectable drug named cabotegravir (CAB-LA) has renewed hopes of further reducing deaths in southern Africa. CAB-LA is highly effective in reducing transmission among people at most risk of contracting HIV.

## Morocco Enters into Green Partnership with EU

To help jointly combat climate change, advance energy transition, protect the environment and boost the green economy, Morocco has entered into a 'Green Partnership' with the European Union (North Africa Post; 18th October 2022). First of its kind the Green Partnership of EU with any country will allow the two sides to progress towards their common goals of becoming low-carbon, and climate-resilient economies.

Under this partnership, work will be done along three main thematic axes: climate and energy; environment, including marine and maritime issues; and the green economy. The two partners have pledged to strengthen early policy dialogue and coordination on energy, climate change, environmental protection and the green economy at bilateral, regional and multilateral levels. They have also agreed to foster innovative, sustainable, job-creation and environmental-friendly projects, develop triangular cooperation with other international actors to encourage a stronger commitment



to achieving the goals of the Paris Agreement and collectively advance the global climate agenda.

### Google Launches its First Cloud Region in Africa

Tech giant Google has launched a cloud region in South Africa, its first in the continent, playing catch-up to other top providers like Amazon Web Services (AWS) and Microsoft Azure, which made inroads into the continent a few years ago (TechCrunch; 5th October 2022).

Google said it is also building Dedicated Cloud Interconnect sites, which link users' on-premises networks with Google's grid, in Nairobi (Kenya),

Lagos (Nigeria) and South Africa (Cape town and Johannesburg), in its quest to provide full-scale cloud capabilities for its customers and partners in Africa.

South Africa now joins Google's global network of 35 cloud regions and 106 zones worldwide, which allow users to deploy cloud resources from specific geographic locations, and access several services, including cloud storage, compute engine and key management systems.

With Google's launch, South Africa now houses four major cloud storage providers in the continent. This cloud region will contribute over \$2.1 billion to South Africa's GDP and support creation of more than 40,000 jobs by 2030.



### Egypt's Efforts Towards Green Energy

Egypt has agreed to sign a Memorandum of Understanding (MoU) with Bulgaria for technical, scientific, technological, and trade cooperation in the field of oil and gas (Zawya; 10th October 2022). During the meeting with H.E. Mr. Rossen Hristov, Bulgarian Minister of Energy, H.E. Eng. Tarek El-Molla, Egyptian Minister of Petroleum and Mineral Resources, stated that there is an opportunity for Egypt's gas supplies to reach East Europe through Bulgaria. The two sides also discussed cooperation in the fields of gas and energy.

Furthermore, Egypt has attracted an estimated investments of more than \$100bn in green hydrogen as the country leverages its green potential (fDi Intelligence; 10th October 2022). Some 70% of these investments are linked to projects unveiled since May this year, with a swathe of new foreign investors reaching deals with the Egyptian government, including Australian mining giant Fortescue's green energy arm Fortescue Future Industries (FFI), India-based Acme Group and UAE-based Alcazar Energy.

## 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) postdoctoral fellowships at the International Center for Chemical and Biological Science (ICCBS), Pakistan.
- Five (05) short-term postdoctoral fellowships at the National Research Centre (NRC), Egypt.
- Two (02) PhD scholarships at the Al-Farabi Kazakh National University (KazNU), Kazakhstan.
- Postgraduate scholarships and postdoctoral fellowships at International Centre for Climate and Environment Sciences (ICCES) under PIFI Programme.
- 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 [www.comsats.org](http://www.comsats.org) or write to [farhan@comsats.org](mailto:farhan@comsats.org).

## TÜBİTAK-TWAS Postgraduate Fellowship Programme

The Scientific and Technological Research Council of Turkey (TÜBİTAK) and The World Academy of Sciences (TWAS), Italy, invite applications from foreign scholars in developing countries of the South who wish to pursue PhD/ Postdoctoral research in a field of the natural and related applied sciences. The Fellowships are tenable at the departments and laboratories of public and private universities of Türkiye and TÜBİTAK Research Centers and Institutes for a minimum period of 6 months to a maximum period of 12 months (for PhD) and 36 months (Postdoc).

Candidates from Science and Technology Lagging countries (STLC) and women are especially encouraged to apply.

**Application Deadline:** 12th December 2022

Detailed information can be found at the given links:

**PhD:** <https://twas.org/node/15378>

**Postdoc:** <https://twas.org/node/15379>

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NRC-Egypt  
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UTG-The Gambia  
[www.utg.edu.gm](http://www.utg.edu.gm)



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