# COMSATS Newsletter

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

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H.E. John Dramani Mahama, Honourable President of the Republic of Ghana / Chairperson of COMSATS

HRH Princess Sumaya bint El Hassan, President, Royal Scientific Society, Jordan.

## Inside this Issue




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## From the Executive Director's Desk

The period July–December 2025 has been a time of renewed energy and meaningful progress for COMSATS, as we continued to advance our mission of promoting science, technology, and innovation (STI) for sustainable development across the Global South. As an intergovernmental organization of 27 Member States, COMSATS continues to serve as a catalyst for South–South and triangular cooperation by fostering collaborative research, capacity building, and policy dialogue to address emerging global challenges. In a world increasingly shaped by climate pressures, rapid technological change, and evolving development needs, COMSATS remains committed to leveraging science and innovation as key drivers of inclusive and sustainable progress.

A key highlight of the period was my official visit to Ghana, where I had the honour of calling on H.E. President John Dramani Mahama, Chairperson of COMSATS. The meeting reaffirmed Ghana's steadfast commitment to the Organization and provided valuable strategic guidance for advancing our shared agenda. Environment, energy, health, and skills development were the areas of priority and interest to the Chairperson. Summit-level meeting of COMSATS was high on the agenda of talks. Visit afforded opportunity to engage with Ghana's Ministry of Environment, Science and Technology and the Council for Scientific and Industrial Research (CSIR), which further strengthened institutional linkages and in identifying new avenues for collaborative research and technology deployment.

Visit to Jordan was an enriching experience where I had the privilege of meeting with Her Royal Highness Princess Sumaya bint El Hassan. During the audience with HRH, we pondered over maximization of technology's efficacy. The Third Meeting of the Technical Advisory Committee (TAC) in Amman helped review the implementation of COMSATS' programmes and Organization's strategic direction. Realization of true potential and use of Network of Centres of Excellence in promoting R&D, commercialization of scientific products for sustainability, emphasis on intra-COMSATS dependence and keeping pace with the emerging technologies were identified as critical areas.

During the reporting period, COMSATS also expanded its global outreach through active participation in international platforms, including COP30, where the Organization contributed with six sideline events to a series of high-level dialogues on agroecology, climate finance, disaster risk reduction, and resilient recovery bringing together expertise from across the globe. COMSATS as an IGO for sustainable development, played its role as a strong advocate


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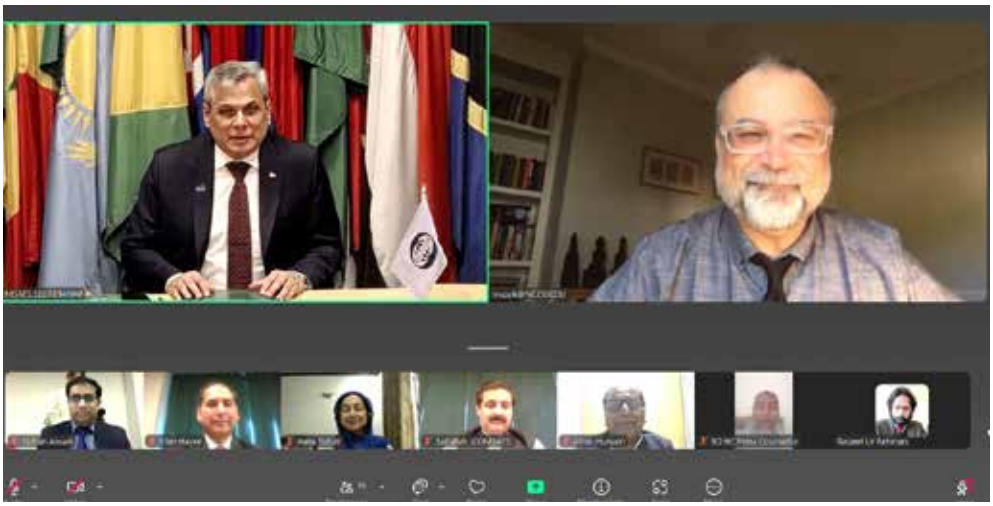
## COMSATS and AIPS Renew Agreement for Academic Cooperation in S&T and Capacity Building

COMSATS and the American Institute of Pakistan Studies (AIPS) signed a Memorandum of Understanding (MoU) on 7th July 2025, aimed at fostering academic cooperation and institutional capacity building in S&T and emerging technologies.

The MoU was signed by the Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, and President AIPS, Dr. Matthew A. Cook, in a ceremony witnessed by some of the representatives of Diplomatic Missions of COMSATS Members States in Islamabad as well as officers of COMSATS and AIPS.

The MoU shall enable COMSATS and AIPS to foster academic collaboration between institutions of COMSATS' founding Member State, Pakistan, and the USA. Cooperation will encompass training programs, creation of opportunities for academic placements, holding workshops and seminars on S&T and emerging technologies,



exchange of information, and pooling of resources for mutual benefit.

Ambassador Zakaria recapitulated past collaboration between COMSATS and AIPS, which included academic lectures, interactive sessions and workshops. "These initiatives reflect shared commitment to academic cooperation, institutional capacity building, and innovation", said the Executive Director. He underscored the active role being played by COMSATS to facilitate South-South and triangular cooperation in emerging fields of science and technology.

Dr. Cook expressed enthusiasm on AIPS' continued collaboration with COMSATS, particularly to serve the scholarly communities of Pakistan and the USA. He noted that AIPS and COMSATS have commonality in terms of objectives as well as affiliation with various R&D organizations and universities. Dr. Cook looked forward to impactful and mutually beneficial collaboration between the two organization.

The ceremony concluded with both sides reaffirming their shared commitment to knowledge sharing, socio-economic progress, and sustainable development.

## Executive Director COMSATS calls on Ambassador of Turkiye to Pakistan

The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, paid a courtesy call on H.E. Mr. İrfan Neziroğlu, Ambassador of the Republic of Türkiye to Pakistan, on 16th July 2025 at the Embassy of Türkiye in Islamabad. The meeting aimed to further strengthen the long-standing relationship and cooperation between Türkiye and COMSATS in the fields of science, technology, and innovation.

Ambassador Zakaria shared a comprehensive overview of past collaborative activities, including co-organized scientific workshops and conferences in Türkiye, and participation of Turkiye's experts in COMSATS' events and activities in Member States. The Executive Director offered postgraduate scholarships to Turkish students at COMSATS University Islamabad (CUI), Pakistan. He informed that COMSATS is initiating a series of online certification training courses for skills development in information technology for the benefit of the Member States and looked forward to participation of Turkiye's professionals in the same.

The Executive Director discussed recent

initiatives of COMSATS, including establishment of Nano Technology Lab, launch of Electric Vehicle (EV) program, Telehealth services, Data Center, Cloud Computing, Hospital Management System, etc. Ambassador Zakaria informed that COMSATS Secretariat is in the process of developing a Catalogue of Products, Technologies and Services offered by COMSATS Centres of Excellence, with the aim of facilitating collaboration and knowledge sharing.

Ambassador Neziroğlu appreciated COMSATS' programmes and recent initiatives. He stated that Science & Technology is a top agenda for Türkiye. He expressed willingness to facilitate Türkiye's active participation in the programmes and activities of COMSATS. He also offered to connect Turkish R&D institutions with relevant institutions in COMSATS' other Member States for mutually beneficial scientific cooperation.

## Ambassadors join COMSATS' Go Green Initiative – Plantation Drive

On 7th August 2025, COMSATS, in pursuance of its Climate activities, launched a Plantation Drive, whereby

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for the interests and priorities of the Global South in global climate discourse.

Environmental sustainability remained a key focus area during the period. COMSATS' "Go Green" and "Forever Green" plantation drives brought together ambassadors and representatives of Member States and partner countries, symbolizing a shared commitment to climate action and ecological preservation. These initiatives not only promote environmental responsibility but also reflect our collective resolve to support sustainable, low-carbon development pathways.

COMSATS' re-election to the Governing Board of the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO), reflected continued confidence of the international scientific community in COMSATS' contributions.

The Organization also made notable progress in advancing its capacity-building agenda. Training programmes in areas such as cybersecurity and emerging technologies attracted participation from Member States, helping to equip professionals with the critical skills needed in today's increasingly digital and interconnected world.

COMSATS continued to strengthen its partnerships with international organizations and academic institutions, including the renewal of cooperation agreements aimed at fostering research collaboration, academic exchange, and institutional capacity building. Such partnerships remain central to our efforts to bridge knowledge gaps and promote innovation-driven development across Member States.

As we look ahead, COMSATS remains steadfast in its commitment to strengthening scientific partnerships, empowering youth, and promoting technology-based solutions to shared challenges. I take this opportunity to express my sincere appreciation to our Member States, partners, and Centres of Excellence for their continued trust, support, and collaboration.

Ambassadors of the Member States and the Partner Countries in Islamabad planted trees as a symbol of peace, cooperation and commitment to a greener planet.

Ambassador Turkmenistan, H.E. Mr. Atadjan Movlamov, Dean of Diplomatic Corps, Ambassador Kazakhstan, H.E. Mr. Yerzhan KISTAFIN; Ambassador Morocco, H.E. Mr. Mohamed Karmoune; Ambassador Syria, H.E. Dr. Ramez Alraee, Ambassador Yemen, H.E. Mr. Mohammed Motahar Alashabi, planted a tree each in the Plantation Ceremony, held at COMSATS Secretariat, at the invitation of Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria. The trees were dedicated to the Ambassadors. Separately, distinguished British MP, Hon. Ms. Naz Shah also planted a tree while lauding the initiative.

The Ambassadors Extraordinary & Plenipotentiary, who planted trees, stressed that international cooperation and initiatives for environmental sustainability are need of the hour as climate change has taken center stage given its bearing on a wide range of cross-cutting fields. They highly appreciated the initiative and expressed strong commitment to support COMSATS in meeting its noble objectives.

COMSATS is an intergovernmental organization of 27 Member States, committed to promoting South-South cooperation in scientific research, innovations and tech-based solutions for sustainable development.

The organization is committed to environmental sustainability and climate resilience and has taken a number of green initiatives, such as development of Electric Vehicle, research on Renewable Energy (Vertical Axis Wind Turbine), solarization of COMSATS Technology Park, etc. COMSATS has a dedicated Centre for Climate and Sustainability having affiliation with 25 institutions across the globe.

## COMSATS' Virtual High-Level Forum on Quantum Science and Technology: Strategic Pathways for the Global South

In commemoration of the United Nations General Assembly's proclamation of 2025 as the International Year of Quantum Science and Technology (IYQ 2025), the COMSATS Centre for Climate and Sustainability (CCCS) convened a Virtual High-Level Forum on "Quantum Science and Technology: Strategic Pathways for the Global South" on 20th August 2025. Distinguished eminent Scientists and Experts Prof. Knobel Executive Director the World Academy of Sciences, Prof. Dr. Galileo Violini, Director Emeritus, CIF, Colombia, Prof. Dr. Zafer Gedik, Sabanci University, Turkiye, Prof. Ozgur E. Mustecaplioglu, Koe Univeristy, Turkiye, Dr. Hamidreza Mohammadi Khoshoei, University of Isfahan, Iran, shared their valuable knowledge and expertise.

The Forum provided an important platform to deliberate on the transformative promise of quantum science and technology (QST) in advancing sustainable development and strengthening innovation ecosystems across the Global South. Participants examined how quantum breakthroughs could enable solutions to critical challenges in climate resilience, food and water security, and equitable economic growth. Bringing together distinguished scientists, policy leaders, and science diplomats, the event

fostered dialogue at the interface of science, policy, and technology governance.

Executive Director COMSATS, Ambassador Dr. Zakaria, cited Prof. Abdus Salam, Nobel Laureate in Physics that "science is the shared heritage of humankind." And added that quantum technologies now represent a frontier of scientific discovery, national security, and industrial competitiveness. He highlighted keen interest and competition among the United States, European Union, and China and significant investments made by them in quantum technologies. He expressed confidence in the Global South's strengths to be in the lead as architect of Quantum Revolution rather than be a follower. He highlighted COMSATS' initiatives in artificial intelligence, nanotechnology, genomic sequencing precision agriculture and renewable energy.

Prof. Dr. Marcelo Knobel, Executive Director emphasized that quantum technologies are a collective global enterprise with far-reaching implications for healthcare, sustainable agriculture, and next-generation industries. He stressed the importance of doctoral training, mobility programmes, and science diplomacy in empowering the South's research communities, while noting that the region's reservoir of scientific talent remains underutilized and must be harnessed to ensure equitable participation in the quantum era.

The technical session featured presentations by Prof. Dr. Galileo Violini (Centro Internacional de Física, Colombia), Prof. Dr. Zafer Gedik (Sabancı University, Türkiye), Prof. Dr. Özgür E. Müstecaplıoğlu (Koç University, Türkiye), and Dr. Hamidreza Mohammadi Khoshoei (University of Isfahan, Iran). Speakers outlined national frameworks for advancing QST, highlighting the urgency of bridging the quantum divide through collaborative research, open-access infrastructure, enabling policy frameworks, and youth engagement.

The Forum concluded with a reaffirmation of the need to embed quantum capabilities into national innovation strategies, expand South–South and triangular research cooperation, and cultivate youth-led innovation ecosystems. It underscored that quantum technologies must be treated as a shared global public good, advancing not only scientific frontiers but also intergenerational equity, technological self-reliance, and inclusive prosperity.

## Diplomats Join COMSATS 'Forever Green Plantation' Drive for Environmental Sustainability

On 25th August 2025, COMSATS, as part of its ongoing Green Initiative continued its plantation drive.

On the invitation of Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, tree saplings were planted by Ambassador of Palestine, H.E. Dr. Zuhair Mohammad Hamdallah Zaid; High Commissioner of Sri Lanka, H.E. Rear Admiral (R) Fred Seneviratne; Ambassador of Somalia, H.E. SheikhNur Mohamed Hassan; Ambassador of Uzbekistan, H.E. Alisher Tukhtaev; and Ambassador of Zimbabwe, H.E. Titus Mehliswa Johnathan Abu Basutu. Plantation symbolizes efforts for enduring peace and support for COMSATS' environmental sustainability efforts.

The Ambassadors highly appreciated COMSATS endeavors to protect environment. They shared their thoughts to underline S&T cooperation and significance of multilateral initiatives in addressing the pressing global challenge of climate change. The dignitaries expressed their firm resolve to support the Organization's endeavors in promoting tech-based solutions for a sustainable and resilient future.

COMSATS is an intergovernmental organization comprising 27 Member States, with a mandate to promote South-South cooperation in scientific research, technological innovation, and knowledge-sharing for sustainable development. The Organization remains steadfast in its commitment to environmental sustainability.
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# SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

## Youth awareness on climate change

The Royal Scientific Society concluded a series of training workshops for youth volunteers participating in the Local Conference of Youth (LCOY), organized in collaboration with local partners and in coordination with the Ministry of Environment. The workshops aimed to raise awareness on climate change issues and their impacts on key sectors in Jordan.

The sessions covered the main pillars of the Paris Climate Agreement and Jordan's national contributions, while

also addressing the links between climate change, energy, and industry. They highlighted the role of energy audits, clean production, and resource efficiency in reducing emissions. The workshops provided a practical platform for youth to expand their knowledge and contribute to innovative solutions that support sustainability and Jordan's climate action efforts..

## Introducing NGS Technology into the Laboratories of the RSS

With the acquisition of an Oxford Nanopore MinION NGS machine, the Virology and Molecular Biology Laboratory at the Bio-Safety and Bio-Security Centre of the Royal Scientific Society (Amman-Jordan), has unveiled Next-Generation Sequencing (NGS) technology. This technology reduces the time needed for Whole-Genome Sequencing (WGS) and the error rate during genome assembly by enabling fast, long read, and real-time sequencing of nucleic acids (DNA & RNA).

The machine was donated to the RSS in order to advance technical capabilities in the area of identifying and characterizing infectious and zoonotic pathogens that are transmitted by humans, animals, and the environment. This significant milestone is part of an ongoing collaboration with the US Defense Threat Reduction Agency (DTRA). In this respect and in cooperation with the General Command of the Jordan Armed Forces-Arab Army, and with the assistance of committed trainers from the Jordanian Royal Medical Services (RMS), specialized training on the equipment was carried out and overseen by specialists from Los Alamos National Laboratories (NM, USA).

## Capacity Building and R&D Activities by NMC–Nigeria

In fulfillment of its mandate to train and develop high-level personnel in the Mathematical Sciences (Mathematics, Theoretical Physics, Computer Sciences, Statistics and Mathematics Science Education) for Nigerian and African Institutions, the National Mathematical Centre, Abuja, an organized a number of Postgraduate Foundation Training Workshops and Seminars. Targeted Participants included graduates, postgraduate students, Lecturers from the tertiary and research institutions, policy makers from governments and industries.

Among the key activities was a two-week Postgraduate Foundation Training Workshop on SageMath, held from June 29 to July 11, 2025. The workshop aimed to enhance participants' understanding of SageMath and its practical application as a tool for solving mathematical problems.

The course focused on the applications of SageMath in mathematical problem-solving and was delivered through a hybrid format, enabling both physical and virtual participation. This approach ensured wider accessibility and engagement, reflecting NMC's commitment to inclusive and technology-driven learning.

## Institutional Prizes and Awards – International Olympiads 2025

The National Mathematical Centre (NMC), Abuja, on behalf of the Federal Government of Nigeria, trained and

presented students at the International Olympiads 2025, where they won the following prizes and awards at the Pan African Mathematics Olympiad (PAMO) and the International Physics Olympiad (IPhO):

- Mathematics – Pan African Mathematics Olympiad (PAMO), Botswana: One gold and two silver medals.
- Physics – International Physics Olympiad (IPhO), Paris, France: Thales STEM Award. The award includes €5,000 and one year of mentorship.

## Finnish Delegation Visits COMSATS University Islamabad

COMSATS University Islamabad (CUI) hosted a delegation from Tampere University, Finland, on August 25, 2025. The delegation was led by Prof. Dr. Moncef Gabbouj, Professor of Signal Processing, and included Dr. Fahad Sohrab, Postdoctoral Research Fellow, and Dr. Asif Sohrab, CEO of Doctor ASKY.

During a formal meeting, Dr. Hammad Omer, T.I., Head of the International Office, presented an overview of CUI's academic profile, institutional strengths, international collaborations, and future vision. The meeting was attended by senior faculty members from the Department of Computer Engineering, including Dr. Syed Junaid Nawaz, Dr. Syed Saud Naqvi, and Dr. Atif Shakeel, along with Finnish alumni serving at CUI.

Dr. Omer highlighted the importance of revitalizing the Memorandum of Understanding (MoU) with Tampere University to promote joint research, faculty development, and student exchange programmes.

The visit underscored CUI's commitment to strengthening global partnerships

and marked a significant step toward enhancing academic collaboration and international engagement.

## CUI Strengthens Partnership with UNESCO-TWAS

COMSATS University Islamabad (CUI) held a virtual meeting with the Executive Director of The World Academy of Sciences (TWAS), Prof. Marcelo Knobel, and his team on August 18, 2025. The discussion focused on the renewal of the Memorandum of Understanding (MoU) for the joint postgraduate and postdoctoral fellowship programmes between CUI and UNESCO-TWAS.

Dr. Hammad Omer, T.I., Head of the International Office, delivered a comprehensive presentation highlighting CUI's successful collaboration with TWAS and outlining its vision for future partnerships. Prof. Knobel appreciated the presentation and confirmed that the proposed MoU would be forwarded to UNESCO for endorsement.

He reaffirmed TWAS's commitment to supporting the fellowship programmes and suggested exploring more flexible financial arrangements to better facilitate fellows. The meeting concluded on a positive note, marking a significant step toward strengthening CUI's collaboration with UNESCO-TWAS.

## TÜRKSAT 6A Marks First Year in Space

TÜRKSAT 6A, Türkiye's first domestically developed communications satellite, successfully completed its first year in orbit. Launched on 9 July 2024, it began broadcasting on 17 February 2025 and was officially inaugurated on 21 April 2025. The project, led by TÜBİTAK UZAY in partnership with TUSAŞ, ASELSAN, and CTech, positions Türkiye among the 11 countries capable of indigenously producing communication satellites. Operating at 42° East, it serves Türkiye, Europe, the Middle East, North Africa, South Asia, and surrounding regions, with a planned lifetime of at least 16 years. All mission control is conducted using TStar-GO, an entirely domestic software developed by TÜBİTAK UZAY. TÜRKSAT 6A represents a major strategic gain, reducing foreign dependency, enhancing technological sovereignty, and strengthening Türkiye's position in global space technologies.

## Visit of Moldovan Delegation to TÜBİTAK-Turkiye

TÜBİTAK hosted Dr. Aurelia Hanganu, Director General of the National Agency for Research and Development

(NARD) of Moldova, and her delegation in Ankara. In his remarks, TÜBİTAK President Prof. Dr. Orhan Aydın emphasized the importance of bilateral cooperation, noting that since the 2019 Cooperation Protocol, five joint calls have been launched and 11 R&D projects supported in areas ranging from engineering and health to agriculture and environmental sciences. A sixth call covering pharmaceuticals, biomaterials, polymers, environmental sciences, and biodiversity. Both sides also evaluated new collaboration opportunities in artificial intelligence, digitalization, metrology, biotechnology, renewable energy, and agricultural technologies, as well as strengthening their joint presence in European-level programs such as Horizon Europe. They agreed to organize technical meetings soon to deepen cooperation.

## Global Moot on Nanotechnology Concludes at ICCBS-Pakistan

The 1st International Congress on Nanoscience and Nanotechnology (ICNN-1) concluded on August 20, 2025, at the International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, with key recommendations for advancing research and education in Nanoscience and Nanotechnology.

Amid growing global attention to this cutting-edge field and its transformative impact across various sectors, particularly healthcare, the congress's concluding session emphasized the urgent need to expand industrial applications of nanotechnology to help uplift the socio-economic condition of people in developing countries.

Prof. Dr. Muhammad Raza Shah, Director of ICCBS, chaired the concluding session, the international scientific event brought together approximately 600 scholars, including foreign scientists from seven countries such as Germany, the UK, Malaysia, Bangladesh, Thailand, and Zimbabwe.

The three-day global gathering featured brainstorming sessions, plenary lectures, invited talks, and technical presentations.

Speaking on the occasion, Prof. Dr. Muhammad Raza Shah thanked both national and international experts for their valuable participation. He said that nanotechnology is the leading materials technology and the fastest-growing field of the 21st century, with immense potential for industrial applications in sectors including medicine, energy, space, nuclear science, textiles, cosmetics, paints, pharmaceuticals, and defense.

Prof. Shah also expressed gratitude to all participants and acknowledged the contributions of faculty, staff, and students in making the global congress a success. On the occasion, foreign scientists also praised the congress's arrangements and lauded the hospitality of the Pakistani people. They stated that hosting such a mega scientific event is a great privilege for Pakistan.

The congress concluded with the distribution of certificates among participants.

## Federal Minister for Science and Technology Visits ICCBS

Federal Minister for Science and Technology, H.E. Mr. Khalid Hussain Magsi, visited the International Center for Chemical and Biological Sciences (ICCBS).

Prof. Dr. Muhammad Raza Shah, Director of ICCBS, and Prof. Dr. Atta-ur-Rahman, Professor Emeritus and former Federal Minister for Science and Technology, welcomed the Minister at ICCBS.

During his visit, the Minister held a meeting with Prof. Atta-ur-Rahman and Prof. Raza Shah. During the meeting, Prof. Raza Shah delivered a detailed presentation on the wide-ranging scientific and research activities being conducted at ICCBS. The participants also discussed various matters of mutual interest in the field of science and technology.

The Federal Minister assured his ministry's full support for this premier research institution of Pakistan. He also commended ICCBS for its contributions to industry and national development.

## Executive Director COMSATS calls on President of Ghana, Chairperson COMSATS

***Executive Director COMSATS calls on President of Ghana, Chairperson COMSATS, Briefs on the IGO's Science, Technology, Innovation & Climate activities***

On 10th September 2025, Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria called on the President of the Republic of Ghana, H.E. John Dramani Mahama, the incumbent Chairperson of COMSATS. The meeting held at the Jubilee House (Presidency) was also attended by Ghana's Minister of Environment, Science and Technology (MEST), H.E. Emmanuel Armah Kofi Buah, Chief Director MEST, Madam Suweibatu Adam, and Director General, Council for Scientific and Industrial Research (CSIR), Prof. Paul Pinnock Bosu.

Ambassador Zakaria paid tribute to the conceiver of COMSATS idea, expressed profound gratitude for Ghana's steadfast commitment to COMSATS as founding member and strong leadership as COMSATS' Chair since 2012. He briefed on COMSATS' ongoing programs and recent initiatives and sought guidance of the Chairperson. Apprised the Chairperson on the achievements made including ISO-certified Nanotechnology Lab, development of indigenous Electric Vehicle (EV) technology which meets international standards, supporting collaborative R&D, postgraduate scholarships, and capacity building activities. Aligning with the development priorities of Ghana, the Executive Director presented tailored technology-based solutions, inter alia, in Environment, Transport, Higher Education/Skills Development, and Energy sectors. Also offered expertise in Genomic Sequencing and TeleHealth. Important matters related to the Commission's General Meeting at the summit level in Ghana, expanding the membership of the Commission and COMSATS Network, deeper emphasis on environmental issues, and greater allocation of resources for regular undertaking of S&T activities to keep pace with emerging technologies, figured prominently during the meeting.

The President acknowledged COMSATS as an important intergovernmental organization and appreciated its role in leveraging science, technology and innovation for facilitating sustainable development across the Global South. He provided guidance to the Executive Director regarding various undertakings of the organization and strengthening cooperation among its 27 Member States. The President assured full support of his high office for Ghana's active participation and support to COMSATS' objectives.

## COMSATS Delegation Engages Ghanaian Focal Point and its Centre of Excellence to Consolidate Strategic Partnerships

As a substantive follow-up to the recent high-level audience graciously accorded to the Executive Director COMSATS by H.E. Mr. John Dramani Mahama, President of the Republic of Ghana and Honourable Chairperson of COMSATS, the delegation, under the leadership of Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, undertook a series of consequential meetings with Ghana's designated Focal Point to COMSATS, the Ministry of Environment, Science and Technology (MEST), as well as the country's premier COMSATS Centre of Excellence, the Council for Scientific and Industrial Research (CSIR).

MEST was duly represented by H.E.

Ms. Suweibatu Adam, Chief Director; Mr. Kwamena Esilfie Quaison, Director, STI Directorate; Mr. Cephas Adjei Mensah, Director, Research, Statistics and Information Management (RSIM) Directorate; Mr. Nashiru Salifu, Deputy Director, Science and Technology; and Ms. Judith Awosemabia. Other attendees included the Director-General of CSIR, Prof. Paul Pinnock Bosu, and Dr. Daniel Asenso-Gyambibi, Director of the Building and Road Research Institute (BRRI). The COMSATS delegation comprised, in addition to Ambassador Dr. Mohammad Nafees Zakaria, Executive Director, Mr. Irfan Hayee, Director Programmes; Dr. Mehwish Durani, Director International Partner Organizations; and Dr. Huma Balouch, Additional Director Programmes.

During the engagements, the Executive Director of COMSATS expressed profound appreciation for the steadfast support and facilitation extended by MEST in enabling the delegation's audience with the President of Ghana. He emphasized that this historic interaction successfully elicited the commitment of the Ghanaian Head of State, who directed MEST to work in close coordination with the COMSATS Secretariat on advancing the proposal for convening the 4th Summit-level Meeting of the Commission (Heads-of-State/Government) in Accra, Ghana, in 2026.

Dr. Zakaria underscored that the envisioned Summit would embody the highest level of political and scientific representation from COMSATS Member States, while also welcoming active participation from global multilateral bodies, including agencies of the United Nations system, subsidiary organizations of the OIC, as well as key regional and international development partners. Such an inclusive platform, he remarked, would serve to catalyze collaborative ventures across the Global South, enhance knowledge diplomacy, and position Ghana prominently as a nexus of South-South cooperation in science, technology, and innovation.

In furtherance of COMSATS' mandate to extend science-and-technology-based solutions to its Member States, Dr. Zakaria apprised the Ghanaian counterparts of several transformative initiatives. These included the Codiskills Training Program Coding for Employment in line with Ghanaian Government Policy Initiative of One Million Coders' to Empower Youth. Genomic Sequencing Programme for developing Precision Medicine capacity; Energy Backup for uninterrupted power supply to mitigate energy outages; and the sharing of indigenous Electric Vehicle (EV) technology. In this context, the Executive Director requested the Chief Director of MEST to kindly pursue follow-up on his formal invitation extended to the Honourable President of Ghana to inaugurate, either in person or virtually, the launch of COMSATS' Nanotechnology Lab as well as the COMSATS' Technology Partner Economia's rollout of its EV products. These landmark achievements symbolize COMSATS' commitment to cutting-edge innovation for sustainable development across the Global South.

The Executive Director further elaborated on COMSATS' flagship undertakings aligned with the Sustainable Development Goals, particularly SDG 3 (Good Health and Well-being) and SDG 13 (Climate

Action). He highlighted the enduring impact of the COMSATS Telehealth (CTH) Programme, which continues to deliver critical primary and secondary health services to populations in difficult to reach terrains virtually at their doorstep using Telecomm Technology, and the growing recognition of the COMSATS Centre for Climate and Sustainability (CCCS), which has been recognised as a prominent voice for the Global South at the leading international climate fora.

On this occasion, the Executive Director presented CCCS' latest publication "CCCS: Five Years of Impact (2020-2025) to Chief Director MEST and invited the Ministry to join hands in shaping collaborative initiatives on climate resilience and sustainability. The Chief Director of MEST graciously welcomed this overture and conveyed Ghana's keen interest in partnering with COMSATS on co-hosting climate-related activities on the sidelines of forthcoming Conferences of the Parties (COP-30), particularly at the Ghana, or COMSATS Member States' Pavilions.

The series of engagements reaffirmed COMSATS' deepening collaboration with Ghana and underscored the strategic alignment between the country's science and technology priorities and COMSATS' overarching mission of advancing collective scientific capacity, technological innovation, and sustainable development across its Member States.

A visit was also undertaken to COMSATS' Centre of Excellence in Ghana, the Council for Scientific and Industrial Research (CSIR), where the delegation was warmly received by the Director-General, Prof. Paul Pinnock Bosu, together with senior officials, including Dr. Daniel Asenso-Gyambibi, Director of the Building and Road Research Institute (BRRI), and Dr. Paul Asante Danquah, Director of CSIR-INSTI. Ambassador Dr. Zakaria commended CSIR's rich legacy of scientific research and industrial innovation, noting its pioneering contributions to Ghana's socio-economic development. Prof. Bosu, while extending warm hospitality, articulated CSIR's eagerness to broaden collaboration with COMSATS, particularly in the domains of food security and climate-smart agriculture, as well as in frontier areas such as cybersecurity and information technology, which constitute priority fields within COMSATS' strategic agenda.

In this connection, the Executive Director invited CSIR to provide comprehensive information on its innovative scientific products and services, so that these could be incorporated into COMSATS' Catalogue of Scientific Products of its Network of Centres of Excellence, thereby facilitating cross-border technology diffusion and knowledge-sharing among Member States. The delegation further encouraged CSIR to enhance its active participation in COMSATS' inter-regional programmes and to benefit from the diverse opportunities available through the Network. These include prestigious fellowships such as the President's International Fellowship Initiative (PIFI), the CAS-ANSO Fellowship Programme, and the CAS-TWAS Fellowships offered at COMSATS Centres of Excellence in China, including the International Centre for Climate and Environmental Sciences (ICCES) and the Tianjin Institute of Industrial Biotechnology (TIB). The delegation also highlighted the availability of fully funded graduate and postgraduate scholarships at COMSATS University Islamabad (CUI), the Organization's Centre of Excellence in Pakistan.

## COMSATS Launches International Training Program on Cyber Security

COMSATS, in collaboration with its technology partner, KhasTech Solutions (KTS), has launched Certified Information Systems Security Professional (CISSP) Certification Bootcamp, a comprehensive online training program, particularly for young professionals, aimed at creating a generation of Cyber Security Experts, on September 25, 2025.

The 8-week course of CISSP is the first of a series of training courses under COMSATS program for skill development. Over 140 cyber security

professionals including IT professionals and Government Officers, from 16 countries viz. Ghana, Iran, Jamaica, Jordan, Kazakhstan, Morocco, Nigeria, Pakistan, Palestine, Somalia, Sudan, Syria, Tanzania, Türkiye, Turkmenistan, and Yemen, have been enrolled for the training.

The inaugural ceremony was attended by Ambassadors and diplomats of COMSATS member states in Islamabad. The representatives of COMSATS Focal Points and Centres of Excellence, from across Asia, Africa, Middle East, and Latin America as also Partner organizations' Representatives and registered trainees participated, online.

Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, highlighted the importance of the course. He stated that cybersecurity is a critical domain for economic stability and national security as the digital transactions, governance and communication increasingly rely on secure platforms. Amb. Zakaria asserted that building expertise in this field will not only create career opportunities but also safeguard our collective digital future. He expressed gratitude to COMSATS' Focal Points, Centres of Excellence, and diplomats for supporting this initiative. He appreciated COMSATS' meaningful collaboration with the KhasTech Solutions.

Speaking on the occasion, CEO KhasTech Solutions, Dr. Ashraf Masood, shared that training covered key domains from Security Architecture to Risk Management, preparing participants for the globally recognized ISC2 certification. Dr. Masood expressed satisfaction that all trainers conducting the sessions are themselves ISC2-certified professionals, ensuring the highest standard of instruction and mentorship.

The Ambassadors lauded COMSATS for launching a high-impact capacity-building program aiming to enhance technical competencies and employment prospects across the member countries, in particular, and developing countries, in general. They considered it a highly valuable and timely initiative.

The training courses lined up covered Cybersecurity, Occupational Safety, Project Management, Risk & Information Systems Control, and Environmental Management Systems.

## Seminar on The Future of Energy: Innovations in Renewable and Clean Energy Technologies

On 30th September 2025, COMSATS, in collaboration with a number of national and international partner organizations, held international Seminar on The Future of Energy: Innovations in Renewable and Clean Energy Technologies. H.E. Sardar Awais Ahmed Khan Leghari, Federal Minister for Energy, Government of Pakistan, graced the inaugural ceremony of the event, as Chief Guest, held at COMSATS University Islamabad (CUI). Ambassadors and diplomats of

Palestine, Philippines, Somalia, Syria, Sudan, and Zimbabwe also attended the inauguration.

The Federal Minister noted that although Pakistan contributes less than 1% of global emissions, it ranks among the most climate-vulnerable nations. "Harnessing our abundant solar, wind, and hydro potential is a national priority for energy self-sufficiency and sustainability," he said. He outlined the Government's reforms, including stronger governance through independent boards in distribution companies, steps toward privatization for efficiency, and digitization with smart and advanced metering.

He added that infrastructure alone is not enough; smart solutions, advanced forecasting, storage, and digital integration are also required. To this end, the Power Planning and Monitoring Company (PPMC) has been established to support evidence-based decision-making. Pakistan is committed to deriving 60% of its electricity from clean and renewable sources by 2030. He remarked: "our grid carries 2,000 MW of wind, 800 MW of solar, and over 10,000 MW of hydropower. Distributed generation, particularly net metering, adds nearly 7,000 MW more, underscoring our steady transition to a sustainable energy future."

He expressed gratitude to the Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, the Rector CUI, Prof. Dr. Sajid Qamar, and all of the collaborating institutions for organizing the event bringing together a diverse and distinguished audience. He commended COMSATS' initiatives and reaffirmed the Government of Pakistan's full support for the organization's mission.

The Executive Director COMSATS highlighted that 15 collaborators from COMSATS Member states and International Partner organizations was a manifestation of the importance attached to Renewable Energy Technologies. He viewed energy security as a cornerstone of sustainable development and therefore called for ensuring access to reliable, affordable, and clean energy, as enshrined in SDG-7, he considered it essential to integrate digital technologies in energy systems. Ambassador Zakaria highlighted COMSATS' initiatives to promote clean energy, particularly the development of indigenous Electric Vehicle (EV). He proudly shared that COMSATS Tech Partner has developed EV technology indigenously.

Prof. Seyed Komail Tayebi, President ECO Science Foundation, Prof. Liu Weidong, Executive Director ANSO, and Prof. Dr. Junaid Mughal, COMSATS University Islamabad delivered remarks during the inaugural session. They highlighted the significance of renewable and clean energy technologies and expressed pleasure on this collaboration. ED ANSO highlighted the ongoing activities of his organization, including scholarships, fellowships, collaborative R&D sand capacity building. He informed that ANSO is promoting international cooperation in S&T with support of its 78 member institutions. He noted that ANSO and COMSATS have common mandate and therefore unlimited opportunities of cooperation. He appreciated COMSATS programs and initiatives.

The seminar included four technical sessions during which 15 speakers from China, Iran, Morocco, Pakistan, Sri Lanka, Syria, Turkiye, and USA delivered talks on latest trends and futuristic technologies in renewable and clean energy, integration of digital technologies in energy systems, and policy interventions to promote clean energy adoption. They explore cutting-edge topics, inter alia, related to solar power, wind energy, biofuels, tidal energy, energy storage breakthroughs, and AI-driven energy systems and smart grids.

The event attracted over 70 in-person and 80 online participants. These included scientists, researchers, policy makers, faculty members and students from Bangladesh, China, Indonesia, Jamaica, Morocco, Nigeria, Pakistan, Palestine, Sri Lanka, Sudan, Syria, Türkiye, United States, and Zimbabwe.

## COMSATS Convenes Third Meeting of Technical Advisory Committee in Amman

COMSATS convened the Third Meeting of its Technical Advisory Committee (TAC) on 14 October 2025 in Amman, Jordan, under the gracious patronage of Her Royal Highness Princess Sumaya bint El Hassan, President of the Royal Scientific Society (RSS), Jordan's premier scientific institution and one of COMSATS' founding Centres of Excellence. Hosted by the Princess

Sumaya University for Technology (PSUT), the meeting gathered eminent TAC members and international experts representing diverse scientific and geographic constituencies of the Global South, reaffirming COMSATS' mandate of advancing equitable scientific and technological development.

The high-level session was attended in person by Prof. Dr. Wejdan Abu-Elhaija from PSUT (Jordan), Prof. Haseena Khan from the University of Dhaka (Bangladesh), Prof. Rahmat Sotudeh-Gharebagh from the University of Tehran (Iran), Dr. Bolanle Ojokoh from the Federal University of Technology (Nigeria), Prof. Dr. Ishenkumba A. Kahwa from The University of the West Indies (Jamaica), and Dr. Chabi A. M. S. Djagoun from the University of Abomey-Calavi (Benin). The meeting also benefitted from virtual participation by Mr. Fernando Santiago Rodriguez of UNIDO (Vienna). The participatory composition of the TAC reflected the global diversity of COMSATS' scientific cooperation framework.

The proceedings commenced with a comprehensive institutional presentation by Prof. Dr. Wejdan Abu-Elhaija, President PSUT, who introduced PSUT's growing footprint in frontier domains including AI, cybersecurity, entrepreneurship, and green innovation, emphasizing the university's alignment with national innovation priorities and international collaboration. Opening the session, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, reaffirmed the organization's founding mandate, inspired by Nobel Laureate Prof. Abdus Salam, to bridge scientific and technological divides between the Global North and South. He underscored that emerging technologies, demographic realities, and climate imperatives demand a transformation in COMSATS' operational mechanisms, network cohesion, and financial resilience. Prof. Dr. Marcelo Knobel, Executive Director of TWAS, acknowledged the historic intellectual convergence of both organizations and reaffirmed TWAS' commitment to expanding co-programmed capacity-building, fellowships, and collaborative research aligned with the SDGs. Prof. Dr. Ashraf Shaalan, Chairperson of the COMSATS Coordinating Council, also addressed the TAC and stressed the vitality of joint actions to advance science, technology, and innovation (STI) for sustainable development.

The meeting focused primarily on reviewing implementation progress of COMSATS' technical programmes during 2024–2025 and charting the strategic direction for the upcoming five-year period under the forthcoming Strategy 2026–2030. Discussions reiterated that COMSATS' value proposition must be increasingly oriented toward economic competitiveness, industrial innovation, climate resilience, and social inclusion across the Global South. Members assessed and reflected upon COMSATS' capacity-building initiatives, technology-transfer efforts, and the performance of its Network of International S&T Centres of Excellence, with a view to enhancing research connectivity, thematic complementarity, and equitable regional representation within the Network.

TAC members contributed rich technical insights on enhancing graduate employability and skills-market alignment, noting that emerging industries such as artificial intelligence, digital manufacturing, and clean energy require radically re-skilled human capital ecosystems. Issues such as entrepreneurship-enablement, innovation incubation, and financing mechanisms were discussed extensively, with emphasis on creating an enabling environment where youth can translate scientific knowledge into socioeconomic enterprises. The Committee underscored the imperative for universities and research institutions to institutionalize entrepreneurship-enabling policies


and cultivate innovation-driven skill sets among youth, ensuring that emerging opportunities translate into socioeconomic value. Deliberations also highlighted the necessity of designing inclusive programmes that expand access for under-represented groups so that technological progress does not widen internal disparities within the Global South. Furthermore, the Committee stressed the importance of enhancing digital literacy, advancing technology-foresight capabilities, strengthening cybersecurity preparedness, and deepening science–policy integration so that COMSATS' initiatives meaningfully accelerate national development trajectories.

Ambassador Zakaria presented key achievements under the COMSATS R&D Fund launched in 2022, which has supported applied research in indigenous electric-vehicle technologies, renewable power applications, climate adaptation tools, and biotechnology solutions within COMSATS Member States. It was stressed that future R&D initiatives should incorporate commercialization strategies, industrial co-creation, and measurable green-transition impact, enabling COMSATS to strengthen innovation value chains that benefit local economies.

A substantive presentation was delivered by Prof. Dr. Ashraf Shaalan, Chairperson of the Coordinating Council, offering a comprehensive and analytically driven overview of COMSATS' Network of International S&T Centres of Excellence (CoEs) and their pivotal role in the Organization's strategic architecture. He emphasized the Network as the foremost mechanism for capacity enhancement, technology co-creation, and South–South knowledge mobility, noting that each CoE has articulated priority thematic domains and specific cooperation services for the benefit of Member States, as consolidated during the 25th Coordinating Council Meeting. Highlighting the dynamic scientific landscape and shifting global innovation priorities, he underscored the imperative of expanding the Network through the inclusion of institutions with cutting-edge competencies in rapidly evolving sectors such as artificial intelligence, cybersecurity, clean technologies, and advanced industrial systems. His intervention reaffirmed that the CoEs constitute COMSATS' most valuable comparative asset — an institutional engine capable of transforming collaborative research into scalable innovation, thereby accelerating socioeconomic transformation and technological self-reliance across the Global South.

Participants also exchanged views on the need for a stronger communication interface between the Secretariat, TAC members, Centres of Excellence, and national focal points. The notion of establishing a continuous, structured virtual platform for scientific coordination was welcomed as essential for year-round collaboration rather than periodic review. The TAC supported COMSATS' intent to institutionalize annual TAC meetings as a formal governance mechanism to enhance advisory responsiveness.

In addition, Ambassador Zakaria shared ongoing institutional reforms designed to strengthen COMSATS' operational architecture and international presence. These include the establishment of an International Division comprising nine cluster coordinators, one each for thematic fields such as biotechnology, ICTs, health sciences, clean energy, climate change, nanotechnology, and industrial technologies, nomination of which will be rotated among Member States. The vision behind this reform is to reinforce Members' scientific ownership of COMSATS' programme design and delivery, bolstering South–South cooperation as a practical and dynamic pillar of progress.

The Committee was also apprised of preparations for the Fourth COMSATS Summit (Heads of State and Government), scheduled for 2026 in

Accra, Ghana. Members agreed that the Summit presents a decisive opportunity to expand COMSATS' political support base and scientific influence, attract new Member States, including from the Middle East, Caribbean, and emerging scientific regions, and secure enhanced resource mobilization for flagship initiatives aligned with the Sustainable Development Goals.

Throughout the meeting, the TAC underscored the urgency of meeting global challenges including climate change, digital inequities, energy transition, health system strengthening, through integrated STI solutions. They called for leveraging COMSATS' Network to accelerate the development and transfer of indigenous innovations, expand training and mentoring pathways, and foster collaborative research clusters that contribute to transforming the socioeconomic landscape of the Global South.

In their concluding remarks, Prof. Dr. Ashraf Shaalan and Ambassador Dr. Zakaria commended TAC members for their strategic counsel and reaffirmed COMSATS' unwavering commitment to delivering impactful outcomes through South–South and Triangular Cooperation. The Third TAC Meeting thus concluded with shared resolve to scale up COMSATS' contributions toward a more technologically empowered, resilient, and prosperous future for its Member States, advancing the legacy of international scientific solidarity envisioned by Prof. Abdus Salam more than three decades ago.

## Executive Director COMSATS Meets Her Royal Highness Princess Sumaya bint El Hassan During Official Visit to Jordan

On 15th October 2025, the delegation of COMSATS, led by its Executive Director, Ambassador Dr. Mohammad Nafees Zakaria, undertook an official visit to Jordan in connection with the 3rd Meeting of COMSATS' Technical Advisory Committee (TAC) and the Joint Training Workshop on Artificial Intelligence and Emerging Technologies for Advancing the SDGs, held at the Princess Sumaya University for Technology (PSUT) under the gracious patronage of Her Royal Highness Princess Sumaya bint El Hassan, President of the Royal Scientific Society (RSS).

As part of the visit, Her Royal Highness graciously hosted a formal dinner in honour of COMSATS, PSUT, ICESCO, and the workshop delegates, which also served as an occasion for a high-level dialogue between COMSATS' leadership and senior Jordanian officials. The gathering was attended by distinguished dignitaries, including Dr. Mashhour Rifai, Secretary-General of the Higher Council for Science and Technology (HCST); Eng. Rafat Assi, Vice President of the Royal Scientific Society (RSS); Dr. Wejdan Abu Elhaija, President of PSUT; Ms. Abeer Arafat, COMSATS' Liaison Officer in Jordan; Dr. Adel Smeda, Science Expert from ICESCO. The Executive Director was accompanied by Dr. Mehwish Durani, Director (IPOs) and Head of the Centre for Climate and Sustainability (CCCS), and Dr. Huma Balouch, Additional Director (IPOs & CCCS).

In her address, Her Royal Highness Princess Sumaya commended COMSATS for its sustained leadership in promoting science diplomacy, climate resilience, and technological innovation across the Global South. Her Royal Highness underscored that "through COMSATS, ICESCO, and TWAS, we

are nurturing an ecosystem where knowledge transcends borders and science becomes a shared language for peace, equity, and progress." Reflecting on Jordan's longstanding engagement with COMSATS, Her Royal Highness recalled that RSS's Industrial Chemistry Centre was among the first COMSATS Centres of Excellence in 1997, a pioneering step that laid the foundation for sustained scientific cooperation between Jordan and the broader COMSATS Network. She noted that this legacy is now being extended through PSUT's emerging role as a hub for digital innovation, AI, and future technologies, thereby deepening Jordan's commitment to science-led sustainable development.

Ambassador Dr. Nafees Zakaria expressed profound gratitude to Her Royal Highness for her consistent advocacy of science for peace and sustainable progress, and to the Government and institutions of Jordan for their invaluable cooperation. He reaffirmed COMSATS' commitment to consolidating partnerships with HCST, PSUT, and RSS, while advancing collaborative projects that leverage AI, quantum science, and emerging technologies to empower developing nations.

Dr. Zakaria highlighted the active participation and technical contributions of TAC Members, who continue to share their expertise and strengthen COMSATS' collective mission across continents. He particularly emphasized that such engagements exemplify COMSATS' evolving ecosystem of scientific exchange and policy innovation, underpinned by a shared aspiration to bridge technological divides within the Global South.

The meeting concluded with Her Royal Highness's assurance of continued institutional support for COMSATS-led initiatives and her appreciation for the organization's consistent efforts in catalyzing scientific cooperation. Ambassador Dr. Zakaria, in turn, presented a commemorative photo album depicting historic visits of the Jordanian Royal Family to Pakistan, symbolizing the enduring bonds of friendship and mutual respect between the two brotherly nations.

## International Workshop on Artificial Intelligence and Sustainable Development Goals in Amman

On 15th October 2025, COMSATS, in partnership with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), the Royal Scientific Society (RSS), and the Princess Sumaya University for Technology (PSUT), convened a high-level international training workshop on "Applications of Emerging Technologies and Artificial Intelligence for Advancing Science, Technology and the Sustainable Development Goals (SDGs)" at PSUT, Amman.

Held under the esteemed patronage of Her Royal Highness Princess Sumaya bint El Hassan, President of RSS, the event brought together distinguished experts, policymakers, and academics from Iran, Bangladesh, Benin, Nigeria, Jamaica, Pakistan, Morocco, and Jordan, representing domains including industry, healthcare, climate resilience, and digital governance. The workshop served as a knowledge-exchange platform for advancing Artificial Intelligence (AI) as a transformative instrument for sustainable development across the Global South and deepening cooperation among COMSATS' Centres of Excellence.

In her inaugural address, Prof. Dr. Wejdan Abu El-Haija, President of PSUT, lauded COMSATS and its partners for fostering an evidence-based dialogue at the intersection of AI and sustainability. She reaffirmed Jordan's national commitment to cultivating an enabling ecosystem for AI innovation and digital transformation, aligned with the country's science and technology vision under the leadership of Her Royal Highness Princess Sumaya.

Addressing participants, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, contextualized the discussion within the global AI landscape, noting that while global frontrunners are investing hundreds of billions in AI ecosystems, developing nations must prioritize indigenous research capacity, human capital, and context-driven innovation to equitably harness the technological dividends of the Fourth Industrial Revolution.

Representing ICESCO, Dr. Adel Smeda,


Expert on Science and Environment, commended the trilateral collaboration among COMSATS, ICESCO, and PSUT, emphasizing that AI's transformative power must be guided by equity, inclusivity, and human-centered principles to ensure that technological advancement contributes to shared prosperity across the Islamic world and the Global South.

The technical deliberations spanned applications of AI in biomedical sciences, industrial optimization, energy systems, climate analytics, natural resource management, and ethical governance. Experts presented cross-sectoral case studies demonstrating AI's role in tackling challenges such as antimicrobial resistance, climate adaptation, clean energy transition, and gender disparities in technology leadership.

Prof. Dr. Haseena Khan (University of Dhaka, Bangladesh) delivered a comprehensive exposition on AI and Big Data in Biomedical Research, illustrating how AI-driven computational models are revolutionizing biological data interpretation, disease prediction, and therapeutic innovation. Her insights underscored the necessity of integrating AI-enabled platforms into healthcare systems to strengthen public health preparedness and biomedical discovery in developing economies.

Prof. Dr. Rahmat Sotudeh-Gharebagh (University of Tehran, Iran) discussed AI Integration in Industrial and Energy Systems, elucidating how advanced predictive analytics and machine learning algorithms can drive industrial efficiency, optimize energy consumption, and minimize carbon emissions. He elaborated on real-time process control, cyber-physical system integration, and digital twins as transformative enablers of data-informed industrial reliability and sustainability.

Dr. Djagoun Chabi A. M. Sylvestre (University of Abomey-Calavi, Benin) presented on Innovative Technologies for Natural Resource Management, providing a scientifically rich account of how frontier tools, including radio tracking, isotopic tracing, drone-assisted monitoring, and DNA barcoding, can be integrated into ecological research for biodiversity preservation. His case studies from Benin exemplified the pragmatic deployment of these technologies for wildlife protection, resource management, and anti-poaching efforts, thus demonstrating how digital ecology can advance sustainability in resource-constrained settings.

Dr. Sufyan Almajali (Princess Sumaya University for Technology, Jordan) explored AI for Predictive Climate Modeling and Resilience, focusing on the role of AI-based simulations in forecasting climate anomalies, managing water scarcity, and enhancing governance mechanisms through data-driven decision systems. He underscored the emerging intersection between quantum computing and AI in optimizing large-scale environmental datasets to improve climate adaptation policies in the MENA region.

Mr. Azhar Zia-ur-Rehman (International Governance Consultant, Pakistan) addressed Ethical and Regulatory Dimensions of AI Governance, emphasizing the urgent need for globally coherent standards and legislative frameworks. He discussed the ethical implications of algorithmic bias, data sovereignty, and accountability, advocating for institutionalized ethical oversight, AI audit systems, and transparency mechanisms to ensure responsible technology deployment.

Prof. Dr. Ishenkumba A. Kahwa (University of the West Indies, Jamaica) shared Caribbean Innovations in Science and Technology, highlighting regionally grounded yet globally relevant models of resilience and sustainable development. Drawing


from initiatives such as the Caribbean Community Climate Change Centre and the Caribbean Catastrophic Risk Insurance Facility, he illustrated how regional collaboration and innovation ecosystems can serve as scalable templates for climate adaptation and disaster preparedness in other parts of the Global South.

Dr. Bolanle Ojokoh (Federal University of Technology, Nigeria) led a session on Gender Inclusion in Artificial Intelligence, presenting a critical reflection on persistent gender disparities in AI research and participation. She underscored the importance of democratizing AI education, promoting gender-responsive innovation ecosystems, and integrating inclusivity principles into AI design. She posited that AI, when leveraged ethically, could itself become a catalyst for closing gender gaps and empowering women in STEM fields across developing regions.

The workshop also culminated in a policy panel on "Trustworthy AI in Practice: Transparency, Accountability, and Societal Alignment," moderated by Dr. Adel Smeda, featuring Dr. Haseena Khan, Dr. Rahmat Sotudeh-Gharebagh, Dr. Bolanle Ojokoh, and Prof. Dr. Mohammad Al Nabhan from PSUT. The discussion examined the ethical, regulatory, and governance dimensions of AI deployment, emphasizing the importance of AI literacy, ethical oversight, bias-aware system design, and inclusive policymaking to ensure that emerging technologies remain transparent, equitable, and aligned with societal well-being.

Attended by over 100 participants, both in-person and online, from COMSATS and ICESCO Member States, PSUT, and RSS, the workshop reinforced COMSATS' mandate of promoting South–South cooperation in science, technology, and innovation. The participants concluded with a shared resolve to strengthen collaborative frameworks for ethical and sustainable AI adoption that advances the developmental aspirations of the Global South.

## COMSATS and WHH Forge Strategic Synergies for Climate Resilience, Disaster Governance, and Sustainable Transformation

On 22nd October 2025, the Secretary General and Chief Executive Officer of Welthungerhilfe (WHH), Mr. Mathias Mogge, paid a high-level visit to the Secretariat of the Commission on Science and Technology for Sustainable Development in the South (COMSATS), underscoring a deepening strategic alignment between the two organizations toward advancing systemic resilience, food security, and climate-smart governance frameworks across the Global South.

In a wide-ranging exchange between Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, and Mr. Mathias Mogge, Secretary General and Chief Executive Officer of WHH, the two sides reaffirmed a shared institutional commitment to integrating scientific innovation, policy coherence, and community-centered resilience mechanisms into national and regional development agendas. Ambassador Zakaria apprised Mr. Mogge of COMSATS' ongoing initiatives in electric mobility, nanotechnology for green innovation, and telehealth for rural health access, key enablers of adaptive and sustainable development. He also highlighted the work of the COMSATS Centre for Climate and Sustainability (CCCS) in promoting regional cooperation, policy research, and climate diplomacy, including COMSATS' active engagement in UNFCCC processes and global dialogues on resilience and sustainable growth.

Mr. Mogge, highlighting WHH's extensive global portfolio in disaster preparedness, sustainable livelihoods, and food systems transformation, emphasized the necessity of linking humanitarian action with long-term climate adaptation and governance reforms. The deliberations converged on developing joint operational frameworks for scaling up climate-risk analytics, nature-based solutions, and technology-driven interventions to enhance resilience and adaptive capacity in climate-vulnerable communities.

The dialogue further reaffirmed that COMSATS' science-policy facilitation

mandate and WHH's field-driven humanitarian expertise together provide a unique model for implementing multi-sectoral resilience systems, bridging local realities with global sustainability agendas under the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the 2030 Agenda for Sustainable Development.

The meeting was attended by Ms. Elke Gottschalk, Regional Director Asia, and Ms. Aisha Jamshed, Country Director WHH-Pakistan, alongside Mr. Irfan Hayee, Director (Programmes), and Dr. Mehwish Durani, Director (International Partner Organizations) & Head, CCCS-COMSATS.

Earlier, on 20th October 2025, Ambassador Dr. Zakaria participated in WHH's 20-Year Commemoration in Pakistan, titled "2005–2025: Building a Resilient Pakistan – Two Decades of Climate Action and Preparedness." The event, attended by senior policymakers, diplomatic envoys, and multilateral representatives, paid tribute to WHH's two decades of partnership with Pakistan in advancing community resilience, disaster governance, and sustainable food systems. Dignitaries including H.E. Mr. Ahsan Iqbal, Federal Minister for Planning, Development and Special Initiatives; H.E. Dr. Musadik Masood Malik, Federal Minister for Climate Change; Ms. Ina Lepel, Ambassador of Germany to Pakistan; and Lt. Gen. Inam Haider Malik, Chairman NDMA, among others, highlighted the imperative of integrated institutional responses for climate adaptation and risk-informed development.

Looking ahead to COP30 in Belém, Brazil, COMSATS and WHH are jointly spearheading a series of high-level thematic engagements that will amplify South–South perspectives in global resilience discourses. These include two flagship side events:

Multi-Stakeholder Dialogue on "Beyond Crisis Response: Cross-Sectoral Approaches for Disaster Risk Reduction, Food Security, and Resilient Recovery", and Panel on "Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation."

These sessions will convene policymakers, financial institutions, scientists, and civil society to deliberate on risk-informed investment frameworks, agroecological innovation, and resilient recovery pathways, contributing to actionable policy recommendations for submission to the UNFCCC and allied global platforms.

Through these forthcoming engagements, COMSATS and WHH

reaffirm their mutual resolve to advance evidence-based, inclusive, and practical resilience frameworks that strengthen national and community capacities for risk-informed planning, adaptive governance, and sustainable recovery. The partnership seeks to translate shared knowledge and innovation into actionable solutions that can effectively support developing countries in building climate-resilient and food-secure societies.

## ANSO convenes General Conference on Science & Innovation for a Sustainable Future

Headquartered in China, the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) organized the General Conference on Science & Innovation for a Sustainable Future, on 28-29 October 2025 in Beijing. "Open Science & Innovation for Inclusive Development" Panel Discussion featured high level scientific experts from various parts of the world, including Pakistan, Egypt, Mongolia, Senegal, Serbia and China. The discussion was moderated by Prof. Gretchen Kalonji, Co-Chair of ANSO-DRR & Former Assistant Director General for Natural Sciences, UNESCO.

The Panelists expressed their views and shared expertise in the backdrop of their respective experiences and positions held at national academic institutes and international scientific platforms. Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS was also invited as a Panelist.

Addressing the questions on the significance of Open Science and Open Innovation, Amb. Zakaria stated that research, data and discoveries should be freely available to everyone and not limited to a privileged few. He said that this openness allows

scientists, scholars and innovators, especially in the countries of the Global South, to participate fully in global research and development. 'Open Innovation harnesses the power of collective intelligence paving way for groundbreaking advancements', he added. The Executive Director highlighted that COMSATS' creation was envisioned by Nobel Laureate, Prof. Dr. Abdus Salam, with overarching objective to bridge the knowledge & technology gap, powered by spirit of inclusiveness and sharing of knowledge, expertise & technology. He shed light on COMSATS' capacity and skill development activities targeting 850 million youth of the Member States, which manifests continued commitment for promoting Open Science and Innovation.

On the sidelines of the Conference, the Executive Director COMSATS held exclusive meetings, inter alia, with Prof. Chunli Bai, Founding President ANSO & Former President, Chinese Academy of Sciences (CAS), Prof. Liu Weidong, Executive Director ANSO, Dr. Marcelo Knobel, Executive Director, The World Academy of Sciences (TWAS), Prof. Mamdouh Moawad, President, National Research Centre (NRC), Egypt, Prof. Cao Jinghua, Senior Consultant for Natural Sciences, UNESCO, Prof. Desheng Wu, University of Chinese Academy of Sciences (UCAS), and Prof. Dr. Jibin Sun, Tianjin Institute of Industrial Biotechnology (TIB), China. During these meetings, he highlighted COMSATS' initiatives in EV, Nanotech, Telehealth, IT, Environment, etc.; discussed opportunities for cooperation in emerging technologies & skills development of youth; and explored technology-transfer opportunities among Member States. They commended the progress made by COMSATS under the leadership of Amb. Zakaria and appreciated COMSATS' collaboration on various fronts.

The Executive Director renewed the Memorandum of Understanding between COMSATS and the Center for Environmental Economics, UCAS (CEE-UCAS) for educational and research collaboration, which coincided with the


start of 10th ANSO-BIDI School. On special invitation, Amb. Zakaria also participated at the meeting of ANSO Africa Hub of Science and Innovation (AAHSI), and made recommendations regarding working plan of the Hub.

## COMSATS re-elected as member of ANSO Governing Board

4th ANSO General Assembly, held in Beijing on 30-31 October 2025, elected its Governing Board's Members. Commission on Science and Technology for Sustainable Development in the South (COMSATS), which was serving 2-year term as Member of the Governing Board since 2023, was re-elected. Other elected members of the Governing Board are from China, Chile, Egypt, Mongolia, Montenegro, Senegal, Serbia and Uzbekistan. COMSATS is ANSO's member since 2022. ANSO, the Alliance of National and International Science Organizations for the Belt and Road Regions, had 77 Members from 52 countries. During the 4th GA meeting, it admitted new members at the recommendation of the Governing Board, which raised the membership to 96 Scientific Institutes/Organizations.

The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria participated in the 4th ANSO General Assembly and 10th meeting of ANSO Governing Board, during which he actively participated and rendered necessary advice. He gave inputs for ANSO's future development strategy and priorities as also in the context of emerging technologies during the course of discussions among the members. Appreciating ANSO's phenomenal growth and substantive activities, Amb. Zakaria committed to COMSATS' continued support and due role towards attaining the objectives that the two Scientific Organizations share. He reaffirmed COMSATS bringing its institutional experience, Network of Centres of Excellence, expertise and capabilities to jointly promote science, technology, innovation, and inclusive development across the Global South.

Amb. Zakaria noted that COMSATS and BRI have 24 common Member States. Moreover, three of COMSATS' Centres of Excellence (NRC-Egypt, RSS-Jordan and TUBITAK-Turkiye) are also members of ANSO. Adding to the ANSO's scholarship program, he offered five MS and PhD scholarships at COMSATS University for nominees of ANSO. Welcoming the scholarship offer which was announced among the members, the ANSO President appreciated the active contribution of COMSATS through its collaboration and scientific activities.

The newly elected board held the 11th meeting under the newly elected Presidency of Chinese Academy of Sciences and discussed future development strategy of the organization.

Executive Director ANSO facilitated ED COMSATS' meeting with President of ANSO-Initiated Alliance on Innovative Enterprises for the Belt & Road Regions, Ms. Cui Yuting for investing in the Electric Vehicle, and indigenous technology acquired by COMSATS' technology partner AGECO under the brand name 'ECONOMIA'. The President expressed keen interest and discussed next steps to carry forward the business proposal.

The depth of COMSATS and ANSO collaboration and its benefits are manifested in numerous scientific and capacity building activities jointly organized by the two, significantly 10 terms of ANSO-BIDI School during 2020-2025, which trained over 650 scientists, researchers and leaders belonging to COMSATS' member countries on various topics related to Innovation, Sustainable Development and Leadership Enhancement.

# SOME ACTIVITIES OF COMSATS' CENTRES OF EXCELLENCE

## Royal Scientific Society (RSS) Receives Silver Category at the UAE Energy Award 2025

The Royal Scientific Society (RSS), through its National Energy Research Center (NERC), has been awarded the Silver Category of the UAE Energy Award 2025 for its EU-supported project on Solar Photovoltaic (PV)-Powered Surface Water Irrigation Pumping Systems in the Jordan Valley.

The award was received on behalf of HRH Princess Sumaya bint El Hassan, President of RSS, together with H.E. the Minister of Environment, during the official ceremony held in Dubai.

This achievement underscores RSS's leadership in advancing Jordan's climate action and green economy goals through tangible, scalable, and community-focused initiatives. The award-winning project replaces diesel-powered irrigation pumps with clean solar energy systems—cutting greenhouse gas emissions, improving air quality, reducing operational costs for farmers, and creating green job opportunities for young engineers and technicians.


The recognition reaffirms RSS's enduring commitment to turning national sustainability strategies into real-world impact across Jordan and the wider region.

## TÜBİTAK President Prof. Orhan Aydın Attends STS Forum in Japan

TÜBİTAK President Prof. Dr. Orhan Aydın attended the Science and Technology in Society (STS) Forum held on 4–7 October 2025 in Kyoto, Japan. Bringing together global leaders shaping the future of science and technology, this year's Forum focused on the societal impacts of artificial intelligence, sustainability, and strengthening science diplomacy.

Prof. Dr. Aydın participated in several high-level meetings, including the Global Summit of Research Institute Leaders, the Funding Agency Presidents' Meeting, and the session on "Science, Technology and Innovation for Future Society." In his remarks, he emphasized the importance of strengthening public trust in science through openness, ethics, and collaboration.

Throughout the Forum, Prof. Dr. Aydın held bilateral meetings with representatives of research institutions, funding agencies, and industry leaders, exploring new avenues for international cooperation. His participation further reinforced TÜBİTAK's commitment to advancing global science diplomacy and responsible innovation.

## TÜBİTAK President Represents Türkiye at the G20 Research and Innovation Meeting

TÜBİTAK President Prof. Dr. Orhan Aydın attended the G20 Research and Innovation Meeting (RIMM) held on 23 September 2025 at the CSIR International Conference Centre in Pretoria, South Africa. The meeting concluded the activities of the G20 Research and Innovation Working Group (RIWG), coordinated nationally by TÜBİTAK.

In his address, Prof. Dr. Aydın emphasized the essential role of science, technology and innovation in tackling global challenges such as climate change, biodiversity loss and disaster resilience. He underlined Türkiye's commitment to open science, inclusivity, and women's active participation in research and innovation.

The meeting concluded with the adoption of the Tshwane Declaration, which set a vision for "Science, Technology and Innovation for Solidarity, Equality and Sustainability," and introduced initiatives such as the G20 Open Innovation Platform.

## TÜBİTAK Makes History at TEKNOFEST 2025 with Record Participation and Rich Content

TÜBİTAK marked its largest-ever presence at TEKNOFEST 2025, held at Istanbul Atatürk Airport from 17 to 21 September, welcoming visitors in 12 tents across 9,000 m². Showcasing Türkiye's dynamic R&D and innovation ecosystem, TÜBİTAK engaged over 50,000 participants through interactive workshops, exhibitions, and science shows spanning fields from space to biotechnology, AI, and chip design. Prominent projects such as TÜRKSAT 6A, the İMECE satellite, the Moon Research spacecraft, and advanced defense systems drew strong attention. TÜBİTAK also introduced its first-ever Store and AI-powered applications, enhancing visitor interaction.

Visited by national and international dignitaries, TÜBİTAK's participation highlighted its leading role in fostering a science culture, inspiring youth, and driving Türkiye's National Technology Initiative forward.

## CUI Represents Pakistan at OIC Youth Day Workshop in Jeddah

COMSATS University Islamabad (CUI) was represented at the OIC Youth Day Workshop titled "Youth Empowerment in Member States via Video Games and Social Media: Prospects and Challenges", held in Jeddah, Kingdom of Saudi Arabia. The event took place on September 4, 2025, and featured Prof. Dr. Sohail Asghar, In-charge CUI Islamabad Campus and Dr. Hammad Omer T.I., Head International Office, CUI, as invited panelists.

The workshop, organized by the OIC General Secretariat, Union of OIC News Agencies (UNA), Social Research and Training Centre for Islamic Countries (SESRIC), and the Ministry of Sports (KSA), brought together experts and policymakers to discuss issues of digital literacy, online safety, and youth empowerment through innovative platforms.

During the visit, Dr. Hammad Omer also held a dedicated meeting at the UNA headquarters in Jeddah, where opportunities for collaboration between CUI and UNA were explored. Discussions focused on joint initiatives in Media and Communication Studies, including possibilities for student and faculty engagement, training programs, and collaborative research. This effort reflects CUI's growing role in contributing to academic, professional, and policy-level discourses within the OIC framework.

## CUI Welcomes Azerbaijan Technical University Delegation to Foster Global Collaboration

On October 2, 2025, COMSATS University Islamabad (CUI) hosted a high-level delegation from Azerbaijan Technical University (AZTU), led by Prof. Subhan Namazov, Vice-Rector for Science and Innovation. He was accompanied by Dr. Bakhtiyar Badalov, Director R&D Department; Ms. Jala Karimova, Representative State Agency on Science and Education; and Mr. Fawad Kashan, Senior Manager Innovation and Commercialization, NUST.

The delegation was received by Dr. Hammad Omer, T.I., Head International Office (IO), and His team, followed by a call on with Prof. Dr. Sajid Qamar, Rector CUI, and Prof. Dr. Sohail Asghar, In-charge Islamabad Campus. Rector CUI appreciated the longstanding academic

ties with Azerbaijan and recalled the services of Prof. Mais Sulemanov from Baku State University, who served at CUI as a Foreign Faculty. Both sides discussed various strength Areas for cooperation, agreeing to prioritize engineering and IT as key focus fields.

Afterwards, during a working meeting joined by Dr. Bilal Ijaz, In-Charge Quality Enhancement Cell (QEC); Head IO, presented CUI's profile and ongoing partnerships with Azerbaijani universities. Discussions focused on joint publications, faculty and student exchanges, participation in international conferences, and initiatives to enhance global university rankings. Dr. Bilal Ijaz highlighted CUI's ranking performance in QS and THE proposed collaborative approaches such as co-publications and joint citations and Faculty/researcher exchanges for improved international visibility of both CUI and AZTU.

The AZTU delegation shared information about their capacity-building projects, international conferences and Winter School program, inviting CUI's faculty and students to participate. They also introduced AZTU as one of the oldest universities in the region, established in1887, with 16,000+ students, 400+ faculty, and 170+ MoUs worldwide. AZTU is ranked among the Top 500 in Europe, 84th in Asia, and 3rd in Azerbaijan.

The visit concluded with a tour of the Junaid Zaidi Library, where guests were briefed on its Digital resources and facilities. On a constructive note, both institutions expressed Commitment to pursue concrete steps for collaboration.

## Maldives National University (MNU) Visits CUI

A delegation from the Maldives National University (MNU), led by the university's Vice Chancellor Ms.

Aishath Shehenaz Adam and Deputy Vice Chancellor Mr. Abdul Rahman Mubaarique, along with 20 MNU students, visited COMSATS University Islamabad (CUI) on October 6, 2025, to explore avenues for academic collaboration and strengthen institutional ties. The delegation was accompanied by Mr. Shahzeb Zafar, Assistant Director, Global Engagement Division, Higher Education Commission (HEC).

The delegation was received by Mr. Naveed A. Khan, Manager, Rector Office; Dr. Bilal Zaka, In-charge Virtual Campus; Dr. Asim Noor, In-charge CU Online; and the International Office team.

During the visit, the MNU representatives met with CUI Rector Dr. Sajid Qamar and senior officials to discuss opportunities for collaboration in research, student exchange, and capacity-building initiatives. The discussions also focused on scholarship opportunities for Maldivian students at CUI and technical cooperation to enhance MNU's Learning Management System,

The delegates and students were given a tour of CUI's Architecture studio, Engineering and Computer Science labs, showcasing the university's state-of-the-art academic and research facilities. A notable highlight of the visit was the student-to-student interaction, where CUI's local and international students guided their MNU counterparts around the campus and shared their enriching academic experiences at CUI. The visit concluded with the presentation of CUI souvenirs to the MNU delegates and students by the Rector Prof. Dr. Sajid Qamar as a gesture of goodwill and friendship.

The visit marked a meaningful step toward fostering a long-term and mutually beneficial partnership between COMSATS University Islamabad and the Maldives National University.

## CUI and UNESCO–TWAS Sign MoU for Fellowship Program

COMSATS University Islamabad (CUI) and UNESCO–The World Academy of Sciences (TWAS) have signed an MoU to launch the CUI–TWAS Fellowship Program on October 16, 2025, fostering collaborative research and promoting academic excellence in science and technology. The online signing ceremony was attended by Dr. Hammad Omer T.I., Head, International Office, and Mr. Kashif Masood, Deputy Registrar / Focal Person, CUI–TWAS Fellowship Program, representing CUI, while Prof. Marcelo Knobel, Executive Director, TWAS, represented UNESCO–TWAS.

The partnership marks a significant step toward strengthening global scientific cooperation and creating new research

opportunities for scholars across the developing world.

## ICCBS-Pakistan Signs MoU with UK-Based Research Company to Boost Research Collaboration

The International Center for Chemical and Biological Sciences (ICCBS), has signed a Memorandum of Understanding (MoU) with M/s ZemBioTech Ltd., Edinburgh, Scotland, UK, to promote innovation in biotechnology and related sciences. The MoU outlines a broad scope of cooperation, including joint research in science and technology, and the exchange of academic staff, researchers, and experts for collaborative research and teaching initiatives.

MoU was signed by Prof. Dr. Muhammad Raza Shah, Director of ICCBS, University of Karachi, and Dr. M. Nadeem Kardar, Director of ZemBioTech Ltd. The online signing ceremony was held at the HEJ Research Institute of Chemistry, University of Karachi.

Speaking on the occasion, Prof. Raza Shah said the collaboration would open new avenues for joint scientific development and provide international exposure for researchers and students. Highlighting the institutional standing of ICCBS, he noted that it is among the leading centers of excellence in chemical, biological, and biochemical sciences, serving as a hub for training scholars from various countries.

Dr. Nadeem Kardar remarked that the partnership would strengthen Pakistan-UK linkages in science and technology. He added that ZemBioTech, as a research and development company dedicated to advancing innovation in biotechnology and related sciences, is keen to collaborate with ICCBS.

Under the MoU, both parties agreed to facilitate the exchange of academic staff, researchers, and experts to conduct research, teaching, and exchange of ideas.

## Experts Highlight Need for Preparedness Before Future Pandemics

Healthcare experts and government officials, speaking at an international workshop, emphasized the importance of preparedness before the outbreak of any pandemic. They noted that, at the scientific level, it is a collective social responsibility to equip ourselves to deal with unforeseen situations arising from disasters or pandemics.

Speakers highlighted that managing an outbreak requires an integrated and coordinated approach. They also noted that the National Institute of Virology (NIV) at the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD), University of Karachi, carried out the highest number of COVID-19 tests in the country during the pandemic.

These views were expressed during the inaugural session of the 45-day international training course titled "COMSTECH–PCMD International Training Course in Virology and Pandemic Preparedness," jointly organized by OIC-COMSTECH and PCMD, University of Karachi. The event was held at the Prof. Salimuzzaman Siddiqui Auditorium, International Center for Chemical and Biological Sciences (ICCBS).

The session was addressed by Prof. Dr. Nazli Hossain, Vice Chancellor, Dow University of Health Sciences (DUHS); Jamshaid Alam Memon, Sindh Special Health Secretary; Prof. Dr. Muhammad Raza Shah, Director ICCBS; Prof. Dr. M. Iqbal Choudhary, Coordinator General OIC-COMSTECH; Ms. Nadira Panjwani, Chairperson, Dr. Panjwani Memorial Trust; and Dr. Saba Farooq.

Prof. Dr. Nazli Hossain emphasized the need for integrated collaboration among stakeholders during pandemics. She said the COVID-19 pandemic redefined the concept of a "global village," as the world witnessed unprecedented coordination among nations. She appreciated the organizers and called for more such initiatives to train young scientists.

Mr. Jamshaid Alam Memon, representing Sindh Health Minister Dr. Azra Pechuho, welcomed international participants and highlighted the role of the Sindh Health Department during the pandemic.

Prof. Dr. Muhammad Raza Shah stressed the importance of preparedness for adverse situations and highlighted the services of NIV during COVID-19. He also appreciated the support of the Sindh Government and described ICCBS as a premier institution with world-class facilities.

Prof. Dr. M. Iqbal Choudhary commended the role of NIV and acknowledged the contributions of the Dr. Panjwani Memorial Trust and the Sindh Government. He noted that COMSTECH promotes science and education among OIC member states and supports innovation for socio-economic development.

Ms. Nadira Panjwani underscored the need for preparedness, warning that pandemics "do not respect borders, rules, or regulations — they can be fatal." She referred to past pandemics such as the Black Death and HIV/AIDS, stressing the importance of preparedness to mitigate global crises.

## COMSATS @COP 30 Brazil

### "Scaling-up Agroecology Initiatives for Net-Zero Pathways in the Global South"

***"Scaling-up Agroecology Initiatives for Net-Zero Pathways in the Global South" – Food and Agriculture Pavilion, Blue Zone, 12th November 2025***


At the Food and Agriculture Pavilion, CCCS, in partnership with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Global Alliance for a Sustainable Planet (GASP); the AOB Group (ICESCO); and the Food Security and Agriculture Centre of Excellence (FACE), Pakistan, convened a high-level policy dialogue titled "Scaling-up Agroecology Initiatives for Net-Zero Pathways in the Global South." The event served as a critical platform for advancing science-driven, equity-oriented agroecological transitions within climate-vulnerable regions.

The session opened with welcome remarks from Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, and Mr. Hassan Akram, Chief Operating Officer, FACE-FFC, Pakistan. Ambassador Zakaria underscored that scientific research, technological foresight, and evidence-informed policymaking remain indispensable for converting climate and agri-food vulnerabilities into development opportunities. He referenced global advancements, including precision agriculture, climate-resilient varietal development, crop diversification regimes, sustainable consumption patterns, and food-loss mitigation, while noting that adoption across the Global South is impeded by systemic resource constraints, capacity gaps, and uneven digital infrastructure. He reaffirmed that strengthened intra-South cooperation, via shared expertise, co-development of technologies, and coordinated knowledge systems, is essential for narrowing the innovation divide and preventing emergent digital asymmetries.

Mr. Hassan Akram, CEO, FACE-FFC, emphasized the centrality of integrated, community-responsive agroecological strategies in advancing net-zero trajectories while ensuring food-system inclusivity and resilience. He highlighted that scaling agroecology requires a confluence of scientific evidence, technological integration, and participatory stakeholder engagement to enable long-term, climate-compatible agricultural systems.

Moderated by Mr. Hafid Boutaleb, CEO of AOB Group, the high-level panel convened distinguished experts including Mr. Amine Alaoui (Chief Sustainability Officer, OCP Nutricrops); Ms. Caroline Chelsea Manyama (Environmental Sustainability Consultant and Project Manager, Success Hands); Mr. Satya Tripathi (Secretary General, GASP); and Dr. Milena Rosenfield (Member, Brazilian Network for Ecological Restoration – REBRE). The dialogue examined science-validated methodologies and policy-relevant strategies for mainstreaming agroecology as a cornerstone of net-zero transitions within global food and agricultural systems.

Panelists collectively highlighted that agroecology must be scaled through integrated nutrient-management regimes, climate-intelligent soil restoration, and strengthened producer cooperatives that enhance both market access and ecological stewardship.

Mr. Amine Alaoui emphasized the role of data-driven fertilizer optimization, regenerative soil nutrition, and landscape-level interventions in reducing agricultural emissions while enhancing productivity and farmer incomes. Mr. Satya Tripathi underscored the urgency of reorienting finance flows, particularly through blended and nature-positive investments, to unlock large-scale capital for community-centered agroecological transformation. Dr. Milena Rosenfield stressed that ecological restoration, biodiversity corridors, and participatory landscape governance serve as foundational pillars for resilient agri-food systems, especially in tropical and subtropical ecosystems facing rapid degradation.

During a substantive audience exchange concerning sustainable meat consumption, Ms. Caroline Chelsea Manyama stressed that the debate must be contextualized within frameworks of equity, culture, and rural livelihoods across the Global South. She clarified that the objective is not the elimination of livestock products, but rather the transformation of livestock systems to become climate-smart, regenerative, and socio-economically inclusive. She elaborated on agroecological interventions, such as rotational grazing models, silvopastoral configurations, improved feed-conversion efficiency, and integrated crop–livestock systems, that demonstrably reduce emissions while enhancing biodiversity, soil functionality, and farmer resilience. She further emphasized that responsible consumption patterns, reduction of food waste, and strengthened support for sustainably produced local commodities can reshape demand without compromising vulnerable communities. Ms. Manyama concluded that the transition toward sustainable meat consumption must be framed as a just transition, ensuring that climate mitigation objectives remain aligned with food security imperatives, cultural practices, and the socio-economic realities of smallholder producers.


## "Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation"

***"Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation" – Pakistan's Pavilion, Blue Zone, 12th November 2025***

On 12 November, CCCS, in collaboration with the Government of Pakistan, ICESCO, ICARDA, WHH-Pakistan, and FACE–FFC, convened a high-level panel discussion at the Pakistan Pavilion on "Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation." Moderated by Mr. Hamid Majid Abbasi, Senior Executive FACE–FFC, the discussion brought together leading scientists and development practitioners, including Dr. Augusto Becerra of ICARDA, Ms. Aisha Jamshed of WHH-Pakistan, Mr. Dan Morrell of Balance, Dr. Sohail Malik of CRCC Pakistan, and Dr. El. Khalil Cherif of the University of Lisboa. The session reviewed the scientific, technological, and institutional prerequisites for mainstreaming regenerative agriculture and circular waste-to-resource innovations, such as biochar deployment, vermicompost systems, microbial soil restoration, anaerobic digestion, and food-loss mitigation technologies, within the agri-food architectures of developing economies. Participants underscored that these interventions can significantly curb methane emissions, rehabilitate degraded soils, enhance hydrological efficiency in arid ecosystems, and close nutrient loops at scale.

In his opening address, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, highlighted the accelerating degradation of global terrestrial ecosystems, noting that approximately 12 million hectares of fertile land are lost annually and that up to 90 percent of soils could be degraded by 2050 without decisive action. He emphasized the structural mismatch between the severity of land degradation and the allocation of climate finance, observing that agri-food systems currently mobilize only about three percent of global climate-related investment. This financial imbalance, he noted, restricts the capacity of developing countries to transition toward regenerative and climate-resilient production systems.


Discussions emphasized the imperative of strengthening national research systems, embedding farmer-centric innovation pathways, and scaling community-driven resource recovery mechanisms, such as composting cooperatives, vermiculture enterprises, and smallholder biogas systems, that simultaneously generate income, improve soil health, and mitigate environmental externalities. The panel also explored enabling conditions for scaling, including policy coherence, donor coordination, blended finance mechanisms, gender-responsive enterprise models, and the integration of GIS, remote sensing, and machine-learning-based MRV systems to support evidence-driven agricultural and landscape restoration planning, particularly in data-scarce regions.

## "Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation"

***"Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation" – Thailand Pavilion, Blue Zone, 13th November 2025***

At the Thailand Pavilion, COMSATS, in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco; the International Centre for Agricultural Research in the Dry Areas (ICARDA); and the Food Security and Agriculture Centre of Excellence (FACE), Pakistan, convened a pivotal dialogue on "Regenerative Practices, Waste-to-Resource Technologies, and Sustainable Agri-Food System Transformation." The session served as a strategic platform for interrogating the scientific, technological, and governance prerequisites for scaling climate-resilient, low-emission agri-food systems across developing regions.

Opening the proceedings, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, underscored the global imperative of transitioning toward sustainable agri-food systems capable of reconfiguring how societies produce, consume, and coexist with natural ecosystems. He highlighted the transformative value of regenerative agriculture, precision farming, agricultural drones, and Waste-to-Resource technologies, encompassing microbial and biological treatments, landfill gas-to-energy systems, and biomass gasification, emphasizing that such innovations can reinforce food security, enhance climate resilience, and ensure dignified nutrition for vulnerable populations.

Dr. Muhammad Sharif, Advisor for Science and Technology at ICESCO, advanced the argument that scientific rigor, research-driven innovation, and regional knowledge exchange must form the bedrock of regenerative and circular transitions, particularly for countries navigating the dual pressures of climate vulnerability and resource scarcity. Complementing these perspectives, Mr. Hassan Akram, Chief Operating Officer FACE-FFC Pakistan, stressed the necessity of strong institutional support, coherent policy frameworks, and inclusive governance to scale sustainable agricultural practices, asserting that empowered farmers, public-private partnerships, and aligned institutions are essential for achieving climate-smart and resource-efficient agri-food systems.

Moderated by Mr. Hamid Majid Abbasi, Senior Executive FACE-FFC, the expert panel brought together Dr. Rabeb Aloui, Director BNCheck; Dr. Sohail Malik, Team Lead Climate Resource Coordination Center (CRCC) Pakistan; and Ms. Thunpicha Greigarn, Climate and Inclusion Specialist, who collectively examined the technical and institutional complexities of deploying

biochar, vermicompost, microbial soil restoration, and food-waste reduction technologies in developing countries. Their dialogue addressed the systemic constraints of financing, institutional fragmentation, and limited data integration, while also considering the enabling role of interdisciplinary collaboration.

Dr. Aloui emphasized the centrality of journalism, public media, and community-level platforms in shaping inclusive and evidence-based narratives on regenerative agriculture and waste-to-resource transitions, noting that inter-ministerial communication hubs, public awareness frameworks, and participatory engagement mechanisms strengthen public trust, policy coherence, and the social legitimacy of low-emission solutions. Dr. Malik identified methane-monitoring data gaps as a critical constraint to meeting Enhanced Transparency Framework (ETF) requirements under the Paris Agreement, underscoring that national coordination bodies such as CRCC can mobilize academia, municipalities, and private-sector operators to jointly pilot biochar, composting, and microbial soil restoration initiatives that deliver both emissions reductions and adaptation co-benefits.

Ms. Greigarn highlighted that climate-smart agricultural transitions must be economically viable and socially equitable, particularly in contexts where ageing farmers are already burdened by competing livelihood pressures; she stressed that stronger inter-agency coordination among agriculture, environment, finance authorities, and local administrations is essential to ensure that adaptation and decarbonization responsibilities do not fall disproportionately on farmers.

The session also integrated forward-oriented thematic questions posed to the speakers, broadening the dialogue toward COP30 and future multilateral workstreams. These included how water–energy–climate nexus approaches can underpin regenerative agriculture in arid regions where water reuse, biogas recovery, and soil restoration intersect; what types of regional and cross-sectoral partnerships between utilities, farmers, and clean-tech innovators are needed to convert organic waste and wastewater into local sources of energy and nutrients; what practical steps can bridge methane-monitoring data gaps across agriculture and waste sectors to strengthen evidence-based ETF reporting; how national coordination mechanisms can catalyze joint pilots on biochar, composting, and microbial soil enhancement; what measures can alleviate the adoption barriers of climate-smart agriculture in ageing rural communities; and which institutional mechanisms or policy instruments can

bridge governance gaps so that low-carbon transitions are shared equitably rather than imposed on farmers alone.

Taken together, the session illuminated a unified message: accelerating regenerative and circular agri-food transformations requires coordinated innovation, strengthened governance, and equitable policy design. The dialogue concluded with a shared call to intensify collaboration, address systemic constraints, and ensure that climate-smart agri-food systems deliver tangible and just outcomes for communities, especially those most exposed to climate impacts.

A significant intervention from the floor further enriched the discourse: a participant emphasized the critical need to make regenerative agriculture accessible to smallholder farmers through localized training programmes, open-source agronomic tools, and youth-led innovation ecosystems. The participant noted that meaningful transformation requires not only advanced technologies but also community-level capacity building and simplified, affordable solutions that farmers in developing countries can practically adopt. It was highlighted that establishing demonstration sites, fostering farmer-to-farmer learning networks, and integrating traditional ecological knowledge with modern scientific approaches can markedly accelerate the transition toward climate-resilient, low-emission agri-food systems.

## "Bridging Climate Finance Gaps: Practical Approaches for Developing Countries"

***"Bridging Climate Finance Gaps: Practical Approaches for Developing Countries" – GCC Climate Action Hub Pavilion, Blue Zone, 14th November 2025***


COMSATS, in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco; the Food Security and Agriculture Centre of Excellence (FACE-FFC), Pakistan; and the Global Carbon Council (GCC), UAE, convened a Policy Dialogue "Bridging Climate Finance Gaps: Practical Approaches for Developing Countries" at the GCC Climate Action Hub Pavilion on 14th November 2025. The session responded to the acute and persistent challenge confronting developing economies, insufficient, unpredictable, and often inaccessible climate finance for adaptation, resilience-building, and climate-resilient agriculture.

Moderated by Dr. Fahman Fathurrahman, Science and Environment Sector Expert at ICESCO, the discussion drew senior government officials, multilateral finance practitioners, and knowledge-sector leaders into a robust exchange on actionable strategies to overcome systemic barriers in public climate finance delivery. Participants discussed emerging frameworks for Loss and Damage, national readiness systems, and institutional reforms essential for translating climate finance flows into measurable, resilience-enhancing outcomes.

In his opening remarks, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, underscored that the global climate architecture continues to reflect asymmetries between those least responsible for emissions and those most severely affected. He reiterated that for developing countries, especially agrarian economies at the frontline of climate stress, grant-based finance is indispensable for safeguarding food systems, natural resources, and public welfare. He emphasized collective responsibility in addressing climate

debt, highlighted the catalytic potential of technology transfer and intellectual-resource sharing, and urged developing nations to strengthen South–South cooperation as a mechanism for aggregating scientific capability, enhancing bargaining power, and optimizing access to multilateral climate funds.

Representing ICESCO, Dr. Muhammad Sharif provided an analytically grounded perspective on the structural reforms required to unlock climate finance for the Islamic world and broader Global South. He stressed that climate finance strategies must be rooted in evidence-based risk assessments, integrated knowledge systems, and enhanced absorptive capacities of national institutions. Dr. Sharif emphasized ICESCO's support for member states in operationalizing STI-driven solutions, including satellite-based monitoring, AI-supported impact modelling, and capacity-building for ministries tasked with NDC implementation, noting that without such systems the effectiveness of climate finance remains severely constrained.

Speaking from the perspective of FACE-FFC Pakistan, Mr. Hassan Akram highlighted the critical role of industry-supported agricultural innovation in accelerating climate-resilient development. Drawing on FACE-FFC's work in digital agriculture and community-based extension ecosystems, he stressed that climate finance can only deliver transformative outcomes when it is channeled into interventions that strengthen farmer-level agency, equip local systems with actionable climate intelligence, and incentivize private-sector engagement in resilient supply-chain development.

Deliberations throughout the session identified practical and scientifically grounded pathways for strengthening access to public climate finance. Speakers reiterated the importance of aligning domestic policies, institutional mandates, and sectoral planning cycles with international funding requirements to address slow disbursement rates and limited absorptive capacity in developing countries. They emphasized that climate finance systems must be designed to support long-term resilience, not short-term project cycles, by integrating climate-risk data into budgeting, embedding multi-sectoral coordination mechanisms, and mainstreaming evidence-based governance practices.

Representing Ghana's Ministry of Environment, Science and Technology, Madam Suweibatu Adams emphasized that institutional readiness is not merely procedural but deeply structural. She underscored that Ghana's progress in accessing climate finance has been anchored in harmonizing scientific evidence with national development priorities, and implementing cross-sectoral coordination mechanisms between environment, finance, science, and local governance institutions. She stressed that for public climate finance to be transformative, it must strengthen local institutions, embed adaptive innovation, and support resilient food and water systems essential to national stability.

From the humanitarian and community-resilience perspective, Ms. Aisha Jamshed of Welthungerhilfe stressed that climate finance must reach the last mile, smallholder farmers, women, and vulnerable rural households, through transparent and verifiable delivery channels. She highlighted WHH's experience in scaling community-designed adaptation models, noting that localized early-warning systems, decentralized water governance, and community-managed resilience infrastructures yield measurable benefits when adequately financed and monitored.

Mr. Oliver Rieche of Balance Eco illuminated the legal and regulatory dimensions of climate finance, explaining that fragmented regulatory environments and outdated legal instruments frequently deter access to funds. He cited examples of countries that reformed fiduciary standards, clarified environmental governance mandates, and introduced standardized resilience-metrics frameworks, thereby unlocking previously inaccessible multilateral finance.

Drawing attention to the critical role of data, Mr. Sohail Malik from Pakistan's Climate Resource Coordination Centre emphasized that without localized climate data integrated into national development planning and budgetary allocations, climate finance cannot be effectively targeted or prioritized. He noted that data-driven modelling


covering agriculture, water, and urban resilience has enabled Pakistan and other regional states to channel public resources toward high-impact interventions and to reconcile short-term stabilization needs with long-term climate-resilience trajectories.

Representing community-driven climate action, Ms. Joselyn Mirashi of the Eco Pulse Network highlighted the significance of empowering local communities with credible information, adaptation tools, and decision-making authority. She underscored that communities are not passive beneficiaries but active co-architects of climate-resilience solutions, with networks such as Eco Pulse elevating community insights, and forging partnerships that translate local priorities into funded adaptation projects.

The dialogue concluded with a shared recognition that bridging climate-finance gaps requires coordinated and multi-layered interventions: grant-based finance, legally enabling regulatory environments, data-driven planning, empowered local institutions, and strengthened South–South and Triangular cooperation. Panelists reaffirmed that climate finance must be transparently governed, scientifically informed, and equitably distributed to ensure that vulnerable populations particularly farmers, rural communities, and low-income urban groups benefit from resilience-building investments. The session contributed substantively to COP30's broader agenda on the Global Goal on Adaptation and the operationalization of the Loss and Damage Fund, highlighting pathways for developing countries to translate climate finance into durable, transformative, and measurable climate-resilience outcomes.

## "Beyond Crisis Response: Cross-Sectoral Approaches for Disaster Risk Reduction, Food Security and Resilient Recovery"

***"Beyond Crisis Response: Cross-Sectoral Approaches for Disaster Risk Reduction, Food Security and Resilient Recovery" – GORD Pavilion, Blue Zone, 14th November 2025***

COMSATS, in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco; the Food Security and Agriculture Centre of Excellence (FACE), Pakistan; Welthungerhilfe (WHH)–Pakistan; the Climate Reality Project, Indonesia; and the Gulf Organization for Research and Development (GORD), convened two sessions of high-level Multi-Stakeholder Dialogues on the theme "Beyond Crisis Response: Cross-Sectoral Approaches for Disaster Risk Reduction, Food Security and Resilient Recovery". The sessions, held at both the GORD Pavilion and the Pakistan Pavilion in the Blue Zone, brought together senior policymakers, international experts, and institutional leaders to deliberate on prevailing disaster governance frameworks and articulate pathways for transitioning from reactive humanitarian intervention to anticipatory, integrated, and community-anchored resilience architectures across the Global South.

In his opening address, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, highlighted the asymmetrical climate burden confronting low-emitting developing countries faced with recurrent floods, glacial hazards, drought cycles, and environmental degradation. He emphasized that resilience can no longer be conceptualized as an emergency add-on but must be embedded into national development planning through nature-based solutions, predictive analytics, inclusive governance, and robust social protection systems that safeguard livelihoods, food security, education, and cultural continuity.


Ambassador Zakaria also underscored the transformative role of science, technology, and innovation, ranging from precision agriculture and AI-enabled climate modelling to drought-resistant crops and blockchain-secured food supply chains, and called for strengthened partnerships and urgent operationalization of the COP27 Loss and Damage Fund.

Speaking on behalf of ICESCO, Mr. Anar Karimov, Head of Partnerships and International Cooperation, highlighted the necessity of safeguarding human development indicators, including learning continuity, cultural assets, and community identity, within disaster recovery frameworks. Drawing on ICESCO's mandate in science, education, and culture, Mr. Karimov stressed that systemic resilience requires embedding DRR into educational curricula, promoting digital literacy for disaster response, and investing in community-centered innovation ecosystems that empower youth and local institutions.

Moderating the session, Dr. Fahman Fathurrahman, Expert in the Science and Environment Sector at ICESCO, underscored the urgent need for policy convergence across environment, agriculture, finance, education, and social development portfolios in order to establish coherent and scalable frameworks for resilient recovery. Through structured discussion, he guided participants toward recognizing that disaster risk reduction must be intrinsically linked with food system transformation, livelihood diversification, and climate-smart territorial development.

From a humanitarian-development nexus standpoint, Ms. Aisha Jamshed, Country Director, Welthungerhilfe (WHH), emphasized the need to shift resilience programming from episodic food aid toward long-term livelihood rehabilitation particularly in communities experiencing prolong climatic shocks that erode development gains. She highlighted the importance of aligning international NGO interventions with national adaptation priorities to avoid fragmented or donor-driven implementation. Drawing from multi-country programmes, she stressed the need for equitable North–South cooperation, locally led adaptation models, and integrated community-based disaster management systems rooted in inclusive early-warning dissemination, agricultural diversification, and women's leadership.

Mr. Sohail Malik of the Climate Resource Coordination Centre (CRCC), Pakistan, elaborated on operationalizing climate intelligence at subnational levels. He explained how harmonized climate datasets, national early-warning infrastructures, and seasonal forecasting can be translated into actionable resilience plans for municipalities and farming communities. He emphasized that bridging the gap between national climate intelligence and local implementation necessitates shared digital data platforms, structured coordination mechanisms, and adaptive governance frameworks that coherently integrate climate-smart agriculture, water resource management, and disaster risk reduction policies. Citing examples from Pakistan, he illustrated how targeted resource allocation informed by risk mapping strengthens local preparedness and protects livelihoods.

Representing the Climate Reality Project, Indonesia, Ms. Arifah Handayani emphasized participatory and locally driven approaches to resilience. She highlighted how communities, local governments, and other stakeholders collaborate to enhance disaster preparedness and strengthen food system resilience. Drawing on practical examples, she showcased successful cross-sector partnerships where government agencies, NGOs, private sector actors, and communities jointly implemented recovery strategies that reduce long-term disaster and climate risks.

Offering private-sector insights, Mr. Hamid Majid from FACE–FFC, Pakistan, discussed strategies for climate-proofing agricultural value chains. He outlined practical and cost-sensitive interventions such as energy-efficient production processes, renewable energy integration, water-smart irrigation technologies, and targeted support mechanisms for smallholder farmers. He noted that well-designed

public–private partnership models have the potential to concurrently advance corporate sustainability commitments, reinforce national climate-adaptation priorities, and strengthen community-level resilience, particularly in regions confronting interlinked food, water, and energy stresses.

From a youth and community empowerment perspective, Ms. Joselyn Mirashi, Climate Advocate and Co-Founder of the Eco Pulse Network (Tanzania), highlighted the central role of young people in catalyzing grassroots resilience initiatives. She shared examples from East Africa demonstrating how youth-led networks strengthen early-warning literacy, promote diversified and climate-smart livelihoods, and enhance community leadership for disaster preparedness and recovery. She emphasized that empowering youth constituencies amplifies local voices in national adaptation planning processes and accelerates the diffusion of low-cost, context-relevant resilience solutions.

Collectively, the panelists affirmed that building resilient recovery systems requires a holistic architecture that links national policy frameworks with localized implementation, transparent and accountable financing mechanisms, inclusive technological solutions, and robust public–private–civil society partnerships. They underscored that resilience can be sustained only through multi-sectoral governance, nature-based and culturally grounded interventions, and strategic long-term investment in community capabilities. The dialogues reinforced the pressing need for strengthened scientific cooperation, equitable climate finance, and enhanced South–South and Triangular collaboration to operationalize disaster risk reduction and secure food systems amid escalating climate uncertainties.

## "Pathways to Net-Zero Through South-South Synergies: Climate-Resilient Technologies, Capacities, and Cultural Anchors"

***"Pathways to Net-Zero Through South-South Synergies: Climate-Resilient Technologies, Capacities, and Cultural Anchors" – UNFCCC Pavilion, Blue Zone, 14th November 2025***

COMSATS, in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco, and the Union for the Mediterranean (UfM), convened an official UNFCCC COP side event, competitively selected through the UNFCCC call for proposals, and held in the designated UNFCCC Side Event Room reserved for official sessions. Titled "Pathways to Net-Zero Through South–South Synergies: Climate-Resilient Technologies, Capacities, and Cultural Anchors," the dialogue brought together senior policymakers, scientific leaders, development economists, and technology innovators to deliberate on how South–South and Triangular Cooperation (SSTC) can function as a catalytic force for net-zero transitions grounded in regional context, cultural continuity, and climate-resilient innovation systems across the Global South.

The session opened with opening remarks from H.E. Dr. Salim M. Al Malik, Director General of ICESCO; Ambassador Dr. Muhammad Nafees Zakaria, Executive Director COMSATS; and Mr. Nasser Kamel, Secretary General of the UfM. Their interventions collectively underscored the structural injustice embedded in global climate asymmetries, where the Global South bears the overwhelming brunt of climate catastrophes, despite historically negligible emissions, and called for a paradigm shift in global cooperation, centered on equity, shared responsibility, and context-appropriate technological transformation.

Ambassador Zakaria highlighted climate change as a systemic development shock, destabilizing hydrological

cycles, intensifying food–water–energy insecurity, and inflicting trillions in cumulative losses on climate-vulnerable states. He underscored that South–South synergies are indispensable to scaling home-grown innovations, such as Pakistan's Ten Billion Tree Tsunami Programme, the rapid expansion of solar capacity, regional energy-connectivity corridors including CASA-1000 and TAPI, and the deployment of indigenous EV technologies. He noted that COMSATS has been instrumental in advancing endogenous climate technologies and scientific capacity, while emphasizing the moral imperative for the Global North to operationalize grant-based finance, technology transfer, and debt relief in alignment with the Paris Agreement and Loss and Damage commitments.

H.E. Dr. Salim M. Al Malik called for a human-centered, culturally anchored climate response, stressing that societies in the Global South are already reconfiguring governance, knowledge, and social protection systems to cope with intensifying climate extremes. He argued that net-zero pathways must be fundamentally cooperative, interregional, and trust-based, reflecting shared histories, common vulnerabilities, and mutually reinforcing development goals.

Moderated by Mr. Hamid Majid Abbasi, Senior Executive, FACE–FFC Pakistan, the panel explored the nexus of culture, climate resilience, and technological convergence, examining how indigenous ecological knowledge, digital innovation, and South–South financing architectures can together generate scalable, just, and context-sensitive pathways toward net-zero.

The panelist, Mr. Mathias Mogge, Chief Executive Officer, Welthungerhilfe (WHH), underscored that blended finance and risk-sharing mechanisms, such as resilience bonds, climate-smart guarantee facilities, and adaptive agricultural investment platforms have demonstrated success in mobilizing both public and private capital for climate-resilient food systems. He emphasized that scaling these mechanisms across the Global South requires data interoperability, harmonized monitoring frameworks, and adaptive management systems capable of capturing multidimensional co-benefits across climate resilience, nutrition, biodiversity conservation, and livelihood stability. He stressed that standardized indicators remain essential for enabling joint regional assessments under South–South cooperation.

Drawing on UfM's experience with highly diverse Mediterranean societies, Mr. Grammenos Mastrojeni, Senior Deputy Secretary General for Energy and Climate Action, emphasized the strategic integration of indigenous knowledge, local innovation, and cultural institutions into energy transition frameworks. He noted that culturally embedded governance models, rooted in long-standing agricultural, water-management, and community stewardship traditions, enhance social acceptance of climate policies and strengthen community resilience. He highlighted UfM's facilitation of cross-border knowledge exchanges, advocating for South–South partnerships that elevate traditional ecological knowledge, community-led adaptation, and inclusive regulatory structures that democratize climate technology adoption.

Mr. Leonardus Vergutz, Chief Scientific Officer, OCP Nutricrops, drew attention to the centrality of soil health as a biophysical determinant of resilience. He proposed that coordinated South–South research frameworks linking soil-health datasets with climate early-warning systems can significantly enhance drought prediction, food-insecurity forecasting, and adaptive cropping strategies. He stressed that interoperable soil-climate platforms can enable countries to co-design drought-resilient agronomic solutions and optimize nutrient-management regimes under increasingly volatile climatic conditions.

Mr. Lincoln Teo, Managing Director, Zero13 & Founder, Intelligence Wise (iWise), outlined how digital innovations, such as decentralized verification systems, blockchain-enabled carbon markets, and AI-driven climate-finance vetting tools, can unlock efficient, transparent, and credible financing pathways. He noted that cross-regional digital collaboration can significantly reduce transaction costs, expand access to climate capital for smaller economies,

and address long-standing barriers to trust and transparency in climate finance.

Dr. El Khalil Cherif, Senior Researcher, Institute for Systems and Robotics, University of Lisbon, emphasized the need for integrated, transboundary early-warning systems capable of pooling climate data across South-South networks. He advocated for interoperable hazard-monitoring architectures that fuse satellite observation, machine learning, and geospatial risk analytics, enabling real-time decision support for floods, wildfires, and coastal hazards. He stressed that responsible data governance, AI-ethics frameworks, and data-sovereignty protocols are essential to ensure that South-South cooperation in predictive analytics remains equitable and aligned with local priorities.

The deliberations underscored that net-zero transitions in the Global South must be approached as holistic development transformations rather than linear technological shifts. Speakers highlighted that strengthened South–South Cooperation serves as a critical structural enabler for regionally adaptive technologies, shared climate intelligence, and co-financed solutions grounded in local socio-ecological dynamics. The discussions further reaffirmed the centrality of cultural anchors and indigenous ecological knowledge in enhancing social legitimacy, behavioral uptake, and governance resilience. Panelists also stressed the indispensability of data-driven, interoperable early-warning and soil–climate information systems for predictive risk management and reinforced food-system resilience. Equally emphasized was the need for science-based and blended financing mechanisms capable of mobilizing large-scale capital flows to support climate-resilient agriculture and future-ready energy transitions. In addition, the dialogue highlighted the transformative role of machine learning, responsible AI, and digital verification frameworks in accelerating innovation while preserving data sovereignty, ethical safeguards, and community priorities.

## COMSATS Observes Circular Economy Week 2025: International Webinar 'From Theory to Action' held

On 13th November 2025 – COMSATS, in collaboration with its Centre of Excellence in Jordan, the Royal Scientific Society (RSS), and the Circular Economy Club (CEC) Jordan, organized an international webinar entitled, 'From Theory to Action: Making Circular Economy Work.' The event held on 13th November 2025, in observance of Circular Economy Week 2025,


which aims to promote the concept of a closed-loop economy, support sustainable business models, and foster collaboration among stakeholders. The webinar brought together experts, policymakers, and practitioners to translate circular economy principles into actionable strategies, aimed at creating common language, and enhance cross-border open discussion and cooperation among local and international participants on advancing Circular solutions through policy, industry, entrepreneurship and academia.

The webinar demonstrated a strong global appeal, by attracting more than 130 participants across the globe. The event showcased a remarkable diversity of perspectives, with representation from 22 countries across four continents, including Bangladesh, China, Egypt, Jordan, Nigeria, Pakistan, Sri Lanka, the United Kingdom, and the United States, among others. The event also stood out for its commitment to gender inclusivity, with 51% female participants, fostering a balanced and representative dialogue on sustainable development.

The opening remarks were given by Vice President of Royal Scientific Society (RSS), Eng. Rafat Assi; Executive Director of COMSATS, Amb. Dr. M. Nafees Zakaria; and the Vice President of the Circular Economy Institute (CEI), Dr. David Greenfield at the inauguration.

In his remarks, Eng. Rafat Assi highlighted the partnership as part of Circular Cities Week 2025, a global initiative to advance sustainable societies. He emphasized RSS's pride in hosting CEC Jordan as a national and regional hub for circular economy knowledge and innovation, stating that circularity is both an environmental


necessity and an economic opportunity. He also announced a significant milestone: the approval of Jordan's first-ever National Circular Economy Roadmap by the Ministry of Environment and Ministry of Trade, setting a clear direction for a future-proof economy.

The Executive Director COMSATS, in his address, emphasized the critical need to move away from the unsustainable linear model of 'take, make, and dispose' towards a regenerative circular framework. He highlighted that this transition is vital for decoupling economic growth from resource depletion, mitigating climate change, and creating new green economic opportunities. He also outlined COMSATS' commitment through initiatives like the AGECO project for retrofitting vehicles to electric, which aligns with circular principles by conserving resources and reducing emissions.

Dr. David Greenfield presented the Circular Economy Institute as a global network for professionals, praising CEC Jordan as its first country member. He provided a global perspective, illustrating the rapid growth of circular economy roadmaps from just four in 2016 to a global momentum today. He stressed that systems thinking is imperative, as circular economy applicability varies by region based on material flows and existing systems. He highlighted that most roadmaps focus on construction, plastics, food, and electronics, and emphasized the need for policy levers and champions to drive the movement forward.

A keynote talk was delivered by Eng. Omar AlSaleh, Senior Circular Economy & Sustainability Expert at RSS and Founder of CEC Jordan, who set the stage for the technical discussions by explaining Circular Economy Facts, Its Interventions and Circular Economy Potential as a Future.

This was followed by an expert panel discussion on the theme "A Roadmap to Circular Economy," moderated by Eng. AlSaleh. The panel featured a multidisciplinary group of distinguished international experts who provided diverse, actionable insights:

Dr. Ashraf Bany Mohammad (Board Member, ISSF; University of Jordan) addressed the critical gap between green/circular concepts and viable business models. Highlighting that less than 5% of startups in the MENA region are environmentally focused, he stressed the need for circular startups to develop strong, revenue-generating business models to attract investment. He proposed two key solutions: creating cross-border green financial instruments and tax incentives to de-risk and support circular ventures, and establishing specialized international clusters to demonstrate the value and scale of the circular industry.

Dr. Zainab Naeem (Associate Research Fellow, SDPI, Pakistan) provided a perspective from the Global South, asserting that industries in developing countries are willing to transition to circular, low-carbon development, often driven by multinational corporations' ESG commitments. She illustrated this with examples of local SMEs being supported by MNCs to upcycle waste into valuable products. A major part of her discussion focused on bridging the gap between academia and industry. She called for a shift from academia working for industry to working with industry, through co-creation, joint innovation labs, and research anchored in local, affordable solutions. She strongly advocated for enhanced South-South cooperation, proposing "circularity corridors" for exchanging recycled goods and technology, enabling the Global South to unite and lead in setting the rules for the circular economy.

The discussions pinpointed several key priorities for moving beyond the theoretical framework and truly operationalizing the circular economy including the evolution from the classic 3R framework to a more comprehensive 6R model Reduce, Reuse, Recycle, Redesign, Remanufacture, and Recover. The integration of digital technologies


such as Artificial Intelligence, IoT, and Blockchain was identified as a key enabler for creating transparent supply chains and intelligent resource management systems. The compelling economic and environmental evidence was also presented, showcasing the model's potential to significantly reduce emissions, conserve water and energy, and generate millions of jobs globally.

The webinar successfully provided a platform for knowledge-sharing and fostered a common language to enhance cross-border cooperation. It reinforced COMSATS' dedication to leveraging science, technology, and innovation for achieving the Sustainable Development Goals (SDGs), particularly SDG-9 (Industry, Innovation and Infrastructure), SDG-11 (Sustainable Cities and Communities), SDG-12 (Responsible Consumption and Production), and SDG-13 (Climate Action).

## COMSATS-CPJRC Ink MoU to Advance Climate-Resilient and Water-Secure One Belt One Road Communities

On 27th November 2025, COMSATS and the China-Pakistan Joint Research Center on Earth Sciences (CPJRC) have entered into a formal cooperation arrangement through a Memorandum of Understanding (MoU). This partnership establishes a framework for scientific, technological, and policy cooperation to confront escalating challenges in water insecurity, land degradation, natural hazards, and climate-induced vulnerabilities across the Global South and the broader One Belt One Road (OBOR) geography.

The MoU was formalized at COMSATS Secretariat by Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, and Prof. Dr. Hong Tianhua, Executive Director CPJRC. The ceremony brought together diplomats from Bangladesh, Morocco, Sri Lanka, Yemen, and Zimbabwe, alongside senior officials from COMSATS, and CPJRC, reflecting the high-level multilateral importance accorded to the partnership.

CPJRC, jointly established by the Chinese Academy of Sciences (CAS) and Pakistan's Higher Education Commission (HEC), stands as a premier hub for advanced research on natural hazards, Earth systems science, ecological protection, and sustainable development. Its mandate to generate cutting-edge scientific knowledge, cultivate research talent, and enable Sino-Pakistan innovation ecosystems positions it as a critical partner in strengthening regional climate resilience.

In his remarks, Ambassador Dr. Zakaria underscored the acute urgency of addressing water scarcity, food insecurity, and climate risks confronting developing nations. He emphasized that the MoU embodies the ethos of South–South cooperation and signals a shared resolve to leverage science, technology, and innovation for a water- and food-secure future. Prof. Dr. Hong Tianhua highlighted CPJRC's major initiatives, endorsed by the Government of Pakistan, particularly those advancing disaster prediction and control, including early-warning systems for glacial lake outburst floods (GLOFs),

seismic hazards, and landslides. He reaffirmed that the partnership with COMSATS will enhance cross-border research capability and accelerate the deployment of integrated hazard-mitigation solutions.

The MoU establishes a comprehensive cooperation architecture covering joint scientific research; multi-disciplinary capacity-building; technological exchange; policy dialogues; and collaborative initiatives in glaciology, hydrology, geospatial analytics, environmental monitoring, land-use planning, and climate-resilience modelling. Both institutions will facilitate the exchange of scientific data, remote-sensing tools, and early-warning technologies to strengthen evidence-based governance and regional preparedness.

Anchored in COMSATS' mandate as an intergovernmental organization of 27 member countries and its specialized climate arm, the COMSATS Centre for Climate and Sustainability (CCCS), the collaboration aims to consolidate South–South scientific partnerships, broaden institutional linkages, and produce community-responsive solutions. The partnership is strategically aligned with global imperatives to strengthen anticipatory disaster governance, ensure responsible resource management, and build climate-resilient societies through innovation-driven, high-impact interventions.

## COMSATS and Technology Partner AGECO launch EV Technology

On 11th December 2025, COMSATS launched Electric Vehicle (EV) Technology, indigenously developed by its technology partner, AGECO. Through years of dedicated research and engineering, the EV technology, under the brand name ECONOMIA, includes locally designed Electric Conversion Kits, enabling the retrofitting of conventional Internal Combustion Engine (ICE) vehicles.

Coordinator to the Prime Minister for Climate Change and Environmental Coordination, was the Chief Guest of the ceremony that was held at COMSATS Secretariat. At the distinguished ceremony, EV converted rickshaws were delivered to M/S Imperial Engineering Company, marking the first commercial deployment of the technology under a recently signed Memorandum of Understanding (MoU). This conversion allows existing fuel-consuming and $CO_2$-emitting engines to be transformed into fully electric, eco-friendly vehicles, an economical and scalable solution for accelerating Pakistan's transition toward clean transport.

The ceremony was attended by Ambassadors/High Commissioners/ Diplomats of Ghana, Iran, Malaysia, Palestine, Syria, Somalia, Yemen and Zimbabwe. Senior officers of relevant Ministries and Departments of the Government of Pakistan, representatives of private sector, as well as leadership of international organizations based in Pakistan also witnessed the ceremony. Media coverage was courtesy of the Press Information Department of Pakistan.

Sharing her thoughts, the Chief Guest stated that Pakistan is among the most climate vulnerable countries, and air pollution across Pakistan's major cities


poses formidable challenge with direct bearing on health & economic activities. She appreciated COMSATS EV initiative that she hoped will positively impact population's health, environment and economy of the country. She paid tribute to the leadership of COMSATS and AGECO for this remarkable achievement.

Speaking on the occasion, the Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria remarked that EVs provide solution for addressing environmental pollution of countries like Pakistan where 52.8 million metric tons of CO2 is annually added to atmosphere by its transport sector and 70% of it is contributed by 32 million fuel consuming 2 wheelers. He noted that indigenous EVs can help the country reduce the import bill, result in import substitution to relieve pressure on the country's forex, improve health index and save public health expenses, generate employment, pave way for innovations and contribute towards achieving UN Sustainable Development Goals.

Mr. Aslam Azad, CEO AGECO praised the Executive Director's unwavering backing and resolve to help him achieve this milestone. He thanked Amb. Zakaria and COMSATS for the invaluable support.

The launch of retrofitted EVs is expected to create new economic opportunities, reduce expenditure on vehicle owners, and contribute to cleaner air in densely populated urban centers. COMSATS aims to expand such collaborative ventures with industry partners across its Member States, enabling wider adoption of green technologies in the Global South.

## COMSATS and CPJRC Strengthen Strategic Collaboration

On December 24, 2025, Executive Director, China-Pakistan Joint Research Centre on Earth Sciences (CPJRC), Prof. Hong Tianhua, paid a visit to COMSATS Secretariat and held a meeting with Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS. The meeting, attended by senior officials from both institutions, focused on reinforcing bilateral cooperation and aligning CPJRC's scientific expertise with CCCS-COMSATS' programmes oriented towards achieving sustainable development within the landscape of Climate Change.

COMSATS and CPJRC are collaborating under a Memorandum of Understanding (MoU) signed on 27 November 2025, which seeks to promote South-South cooperation, co-organize capacity-building initiatives, conduct joint research projects, and strengthen knowledge-sharing between the two institutions.

During the engagement, both sides reviewed their respective Annual Activity Calendars and explored priority areas for collaboration, particularly the capacity-building programmes for COMSATS Member States in the fields of climate change adaptation, disaster management and related scientific domains. The discussions underscored the shared commitment of both organizations to advancing scientific cooperation, enhancing technical competencies, and facilitating

joint initiatives that support sustainable development across the Global South.

The meeting concluded with an understanding to maintain regular coordination and develop a structured implementation plan for the identified areas of collaboration, ensuring a strengthened and long-term partnership between COMSATS and CPJRC.

## Secretary General-Designate D-8 visited COMSATS to strengthen Bilateral Cooperation in S&T

Secretary General-Designate of the Developing 8 Organization for Economic Cooperation (D-8), Ambassador Sohail Mahmood, visited the COMSATS Secretariat on 24th December 2025. He was warmly welcomed by the Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria.

Ambassador Zakaria congratulated Ambassador Sohail Mahmood on his appointment as Secretary General, D-8. He provided a comprehensive overview of COMSATS' mission, strategic priorities, and its role in advancing South-South cooperation through science and technology. Ambassador Zakaria highlighted that COMSATS and D-8 share six common Member States including Bangladesh, Egypt, Iran, Nigeria, Pakistan, and Türkiye, and underscored their significance of active participation within COMSATS' multilateral framework. Ambassador Zakaria also informed that COMSATS has a Centre of Excellence in Indonesia, along with strong collaboration with leading S&T institutions in Azerbaijan and Malaysia.

Ambassador Sohail Mahmood acknowledged COMSATS' notable achievements and commended its long-standing contributions to strengthening scientific and technological capacity across the Global South. He expressed his willingness to explore mutually beneficial avenues of engagement between D-8 and COMSATS. The discussion covered a range of potential collaborative areas, including capacity-building programmes, joint research initiatives, technology-driven development solutions, and institutional partnerships. They agreed to explore opportunities for bilateral cooperation between COMSATS and D-8 in the areas of science, technology, and innovation, and to identify mutually beneficial avenues for collaboration.

They reaffirmed their intent to advance cooperation in key areas of shared priority, including Agriculture and Food Security, ICTs, Climate Change and Environmental Sustainability, Energy, and Industry.

## COMSATS and InoTech Solutions sign MoU

On 30th December 2025, COMSATS and InoTech Solutions joined hands to accelerate large-scale public-private partnerships for digital enablement across Pakistan and beyond.

The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria and CEO InoTech Solutions signed a landmark Memorandum of Understanding (MoU).

This strategic collaboration is step forward in innovation, capacity building and national development through technology.

COMSATS' host country, Pakistan, presents unique opportunity for leveraging emerging technologies to drive social growth, governance efficiency and inclusive innovation. With a population exceeding 240 million, a growing youth demographic, and increasing digital adoption, the country is ripe for tech-driven transformation, especially in public services.

## Cybercrime Mitigation & Governance Forum 2025

Under the patronage of Her Royal Highness Princess Sumaya bint El Hassan, President of the Royal Scientific Society (RSS), the Cybercrime Mitigation & Governance Forum 2025 officially commenced at the Royal Scientific Society. The forum marks a significant step in addressing one of the defining challenges of our era—the governance of cyberspace and the protection of societies and systems in an age driven by rapid digital transformation—in alignment with the Royal directives to implement Jordan's Economic Modernization Vision.

Organised by the Royal Scientific Society in partnership with the National Cybersecurity Centre, and supported by the Embassy of the Czech Republic in Jordan, the forum brings together experts from the Czech Republic alongside representatives of Jordanian security agencies, the banking sector, critical infrastructure institutions, as well as academic and government bodies.

The two-day forum focuses on national and legislative frameworks for combating cybercrime, strengthening governance and international cooperation, mechanisms for cross-border digital evidence exchange, and emerging challenges related to cryptocurrencies, the dark web, and associated cyber threats. It also explores the growing role of artificial intelligence in enhancing cybersecurity capabilities, particularly in threat detection, analysis, and incident response.

The forum reflects Jordan's commitment to ensuring that the digital age serves humanity, not the other way around, and underscores the importance of shared understanding, foresight, and collective resilience in confronting evolving cyber threats, reaffirming that knowledge guided by conscience is the foundation of sustainable digital security.

## Enhancing Greenhouse Gas Inventory Capacity in Yemen

The Department of Climate Change Studies at the Royal Scientific Society (RSS) conducted a week-long training workshop in cooperation with the United Nations Development Programme in Yemen (UNDP Yemen), aimed at strengthening the capacity of the greenhouse gas (GHG) inventory team in the Republic of Yemen. This initiative forms part of broader regional efforts to address the impacts of climate change and to enhance compliance with international standards for climate reporting.

The workshop focused on building participants' technical skills in compiling, managing, and reporting greenhouse gas emissions in accordance with the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines. The training sought to improve the quality, accuracy, and transparency of national GHG inventory processes.

Key components of the programme included an in-depth review of GHG methodologies, reporting requirements, and international best practices, aligned with the latest IPCC updates. These theoretical sessions were complemented by practical, hands-on exercises, enabling participants from various economic sectors to apply standardized methodologies to real-world scenarios.

The workshop also strengthened participants' understanding of emission assessment methodologies and the development of a comprehensive national inventory system—an essential foundation for national communications, climate action planning, and mitigation strategies. Through this initiative, RSS continues to reinforce its regional role in knowledge-sharing and capacity-building in the fields of climate change and environmental management.

Overall, the training equipped participants with essential tools and expertise to enhance climate reporting, support evidence-based decision-making, advance sustainable development, and strengthen the formulation of effective environmental policies.

## CUI-Pakistan Strengthens Academic Ties with Malaysia

Prof. Dr. Raheel Qamar, T.I., Rector COMSATS University Islamabad (CUI), together with Dr. Hammad Omer, T.I., Head International Office, participated in a high-level engagement with Ambassador Mohammad Azhar Mazlan, High Commissioner of Malaysia to Pakistan.

The interaction took place during the event titled "Engagement

with Stakeholders and Friends of Malaysia", hosted at the Malaysian High Commission Islamabad in the Diplomatic Enclave, Islamabad. During the meeting, the Rector CUI highlighted the long-standing academic linkage between Pakistan and Malaysia, noting that CUI proudly hosts over 80 PhD-qualified faculty members from Malaysia across various disciplines. Discussions focused on further strengthening institutional engagement, enhancing academic exchanges, and exploring new avenues of collaboration with Malaysian universities. The event brought together a distinguished gathering of diplomats, academics, and media professionals.

The Rector also extended a cordial invitation to the Malaysian High Commissioner to visit COMSATS University Islamabad at his convenience, reaffirming CUI's commitment to expanding its international partnerships and people-to-people academic ties. This engagement reflects CUI's proactive approach toward internationalization and its continued focus on fostering meaningful global academic collaborations.

## CUI and COMSTECH Co-Host Conference on STI Policy for SDGs

On December 08, 2025, COMSATS University Islamabad (CUI) successfully co-hosted an international conference with OIC-COMSTECH on Strengthening STI Policy Implementation for Achieving the SDGs.

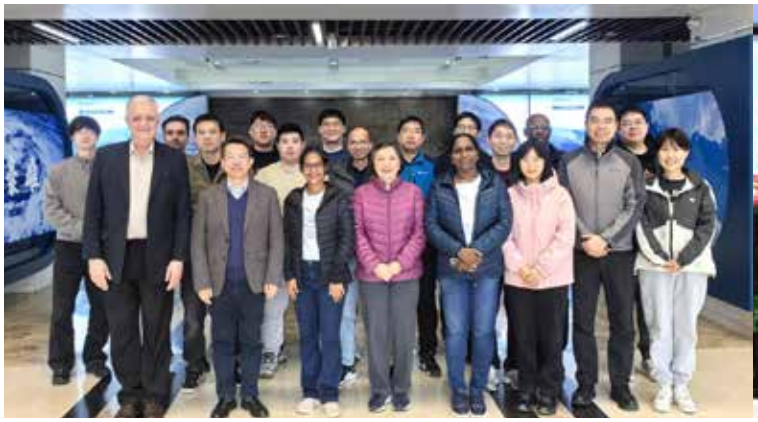
The hybrid event gathered academics, policymakers, and researchers to address critical gaps between policy design and execution in developing countries. CUI faculty members were central to the discourse: Dr. Hammad Omer discussed models for aligning STI policies with the Sustainable Development Goals (SDGs), while Dr. Kalsoom Sumra reviewed global policy frameworks. Dr. Javeria Ambreen focused on inclusivity, advocating for better integration of gender perspectives to address disparities within STI institutions. Prof. Dr. Mudassir Asrar stressed the need for coordinated, mission-oriented STI systems to tackle urgent challenges like climate change and food insecurity.

Other experts, including Dr. Khaleel Malik (University of Manchester), highlighted the role of university–industry collaboration in boosting innovation capacity, and Dr. Tariq Mahmood Ali emphasized evidence-based research for policy decisions. The conference concluded with the presentation of a draft technical framework by Dr. Ismaila Diallo (Advisor-COMSTECH), designed to support OIC member states in developing and executing effective STI policies, underscoring the collective finding that persistent implementation gaps require stronger institutional support.

## CUI Participates in USEFP's 75th Anniversary Celebration

COMSATS University Islamabad (CUI) participated in the 75th anniversary celebration of the United States Educational Foundation in Pakistan (USEFP), held on December 9, 2025, at the USEFP Office in Islamabad. CUI was represented by Dr. Hammad Omer, T.I., Head of the International Office, accompanied by members of his team. The event brought together senior officials, education leaders, alumni, and partner institutions to reflect on USEFP's seven and a half decades of impact through flagship programs such as Fulbright scholarships and other academic exchange initiatives. The program featured keynote remarks by Ms. Sherry Keneson-H Hall from the U.S. Department of State, Mr. Kamal Uddin Tipu, Board Chair of USEFP, and Mr. Peter Moran, Executive Director of USEFP, who highlighted the Foundation's achievements, evolving role, and future vision in strengthening bilateral educational ties.

A special highlight of the event was



the screening of the documentary "75 Years in 75 Seconds," showcasing USEFP's journey and its transformative impact on generations of scholars and institutions in Pakistan. The celebration also provided valuable networking opportunities for participants, including interactions with senior U.S. officials such as Mr. Andy Halus, Minister Counselor for Public Diplomacy.

## ICCES-China organized AIESMx Project Meeting 2025

ICCES organized The AIESMx BRICS Project Meeting 2025 from October 30 to November 1, 2025. This meeting, titled the "Annual Meeting on Artificial Intelligence and Earth System Modeling toward Detection of Extreme Climate Events in the BRICS," aimed to advance research on extreme climate events through academic exchanges and cooperation among BRICS countries. Over 20 experts from Brazil, India, and China gathered to discuss topics such as Earth system modeling, extreme climate events, land use and cover changes, and the integration of machine learning with climate simulations.

Researchers from Brazil and India presented their latest findings. Dr. Paulo Nobre from the National Institute for Space Research, Brazil, highlighted Brazil's progress in studying extreme events like heatwaves and droughts, the climate impacts of Amazon deforestation, and sub-seasonal to seasonal predictions of extreme events. Dr. Chou Sin Chan, also from the National Institute for Space Research, Brazil, focused on the influence of urbanization and air-sea interactions on extreme heat events in Brazil using regional climate models. Dr. Michel Pompeo Tcheou from the Universidade do Estado do Rio de Janeiro, Brazil, contributed to the discussions with his expertise in related fields. Dr. Ayantika Dey Choudhury from the Indian Institute of Tropical Meteorology shared India's advancements in climate model development, climate simulation, and changes in extreme events in monsoon regions.

The meeting concluded with a discussion on the project's achievements and future plans. Representatives from all three countries agreed that significant progress had been made in the study of extreme climate events, especially in integrating artificial intelligence with Earth system models.

## ICCES-China Delegation Visited TWAS Secretariat to Strengthen International Scientific Collaboration

From November 24 to 25, 2025, the ICCES delegation visited the TWAS Secretariat in Trieste, Italy under the invitation of Prof. Marcelo Knobel, executive director of TWAS. The visit aimed to explore future collaborations and enhance existing partnerships in climate and environmental sciences with TWAS.

During the visit, Prof. Zhaohui Lin highlighted ICCES's progress and key achievements in the field of climate and environmental sciences, including organizing high-level international conferences, such as the CTWF, and conducting various international cooperation projects to address climate-related disasters in developing countries. These efforts aim to jointly tackle climate change and promote sustainable development in the global South.

Prof. Knobel introduced the history and the mission of TWAS, as well as its efforts to support sustainable development in the Global South, through scientific research, education, and policy initiatives. Prof. Knobel emphasized the role of TWAS in promoting South-South cooperation and capacity building in developing countries, particularly through its network of Centres of Excellence, including ICCES. He also highlighted TWAS' commitment to fostering young scientific leaders through programs such as the TWAS Young Affiliates and the TWAS-UNESCO Associateship Scheme.

In addition to the discussions with TWAS secretariat for further

collaboration in climate and environmental sciences, the delegation also visited several institutions in Trieste, including the University of Trieste, the International Centre for Genetic Engineering and Biotechnology (ICGEB), and the National Institute of Oceanography and Experimental Geophysics (OGS). These visits provided opportunities to explore collaborative projects in fields such as climate and environmental sciences, oceanography and biotechnology.


## Sri Lanka Celebrates National Science Week 2025

National Science Week 2025 was successfully held from November 10–14, 2025, under the theme "Building Trust, Driving Transformation: Science for Sri Lanka's Tomorrow." The event featured a diverse range of activities, including forums, workshops, science walks, and school outreach programs. These initiatives were coordinated by the Ministry of Science & Technology Sri Lanka, in collaboration with affiliated institutions, aiming to promote science awareness and foster innovation across the country.

The Industrial Technology Institute (ITI) played an active role in the celebrations by successfully organizing a Science Walk on November 11, with participation from several institutes. This was followed by Open Days held from November 11–12, which attracted a large number of visitors.

During the Open Days, Business Clinics were arranged to engage with stakeholders, providing valuable information on ITI's services and addressing queries related to research, innovation, and support for inventors in collaboration with the Inventors Commission.

In addition, ITI conducted a specialized training program titled "Analytical Method Validation as per ISO/IEC 17025:2017 – Chemical Laboratories" on November 19 at its Main Auditorium. The program witnessed excellent participation, with 53 laboratory professionals from various institutions benefiting from the training.

## TÜBİTAK-Turkiye Science Awards

The 2025 TÜBA and TÜBİTAK Science Awards were held at the Beştepe Congress Center, hosted by President Erdoğan. The ceremony highlighted Turkey's "National Technology Initiative," emphasizing significant progress in R&D and defense independence. President Erdoğan noted that R&D funding reached 153 billion TL over 23 years, with technoparks increasing from 2 to 113. Minister Kacır reported that Turkey now ranks 14th globally in scientific publications. Key highlights included the presentation of the first Turkish Antarctic Maritime Map (INT 9167) and awards for 11 distinguished scientists. The event reaffirmed Turkey's commitment to supporting young researchers and high-tech sovereignty.

## TUBITAK-Türkiye Expands Scientific Frontiers through Global Cooperation

### Türkiye and Colombia Strengthen Scientific Cooperation in Antarctica

On December 15, 2025, TÜBİTAK and the Colombian Ocean Commission signed a Memorandum of Understanding (MoU) during an online ceremony to enhance scientific collaboration in Antarctica. The agreement establishes a structured framework for joint research projects, expedition participation, logistical support, and data sharing. TÜBİTAK President Prof. Dr. Orhan Aydın and

Colombian Ambassador Julio Aníbal Riaño Velandia emphasized that this partnership promotes universal knowledge and peaceful international governance. This MoU builds on a relationship started in 2018, reinforcing Antarctica's role as a vital laboratory for studying climate change and biodiversity.

**Türkiye's ARF-ACC Supercomputer Climbs Global TOP500 Rankings**

TRUBA, Türkiye's high-performance computing infrastructure operated by TÜBİTAK ULAKBİM, achieved significant success in the November 2025 international rankings. The ARF-ACC supercomputer rose 121 places to rank 145th in the TOP500 list, following a strategic investment in NVIDIA H200 GPUs. It also ranked 45th in the Green500 for energy efficiency and 70th in the HPCG performance tests. These advancements strengthen Türkiye's R&D ecosystem in artificial intelligence, climate modeling, and engineering, providing researchers with a globally competitive, sustainable, and powerful computing infrastructure.

## Workshop on Microbial Genomics and Nanopore DNA Sequencing Technology Held

International Center for Chemical and Biological Sciences (ICCBS), organized a pioneering workshop titled "Bacterial Genomics: A Hands-on Workshop Using the Third Generation of Sequencing (Oxford Nanopore)".

The event introduced participants to bacterial genomics and the latest advancements in sequencing technologies, with a special focus on Oxford Nanopore platforms. The workshop attracted researchers, students, and professionals eager to explore the practical applications of third-generation sequencing.

Speaking at the inaugural ceremony, Prof. Dr. Muhammad Raza Shah, Director of ICCBS, highlighted the significance of genomics and Nanopore technology, emphasizing the need to keep pace with rapid technological developments. He appreciated the organizers and reaffirmed his commitment to supporting initiatives that strengthen scientific training and research.

Dr. Ishtiaq Ahmed Khan delivered a comprehensive session on Next-Generation Sequencing (NGS) and its transformative impact on microbiology. An Oxford Nanopore technical expert provided an in-depth overview of the MinION, GridION, and PromethION platforms and their diverse applications. A key highlight of the workshop was the Data Analysis and Interpretation session, conducted by a bioinformatician who trained participants in tools used for processing raw sequencing data and analyzing bacterial genomes.

The workshop equipped participants with practical skills and advanced knowledge, fostering collaboration and strengthening the field of bacterial genomics in Pakistan. It is expected to support improved research methodologies and contribute to cutting-edge discoveries in microbiology.

# ARTICLE: INSTALLATION OF A 167 KW SOLAR SYSTEM AT CIS

**by Yasir Zulqarnain***

Sometimes, a single decisive step is all to transform a stumble into a stride and a stride, into a march toward advancement. Same is the story of COMSATS Internet Services (CIS), a project of COMSATS, established in 1996. Not long ago, the data Center of CIS could be ranked below tier 1, which is now at tier 2 and advancing.

In an era where digital infrastructure is expanding at an unprecedented pace, the energy demands of an Internet Service Providers (ISPs) have grown substantially. Data centers, networking equipment, transmission towers, and cooling systems collectively consume enormous amounts of electricity.

The incumbent leadership of COMSATS identified some basic shortcomings in CIS, in addition to addressing these, the installation of a 167-kilowatt (kW) solar system at COMSATS marks a transformative step, not only for the organization itself but as a model of demonstrated activity in the field of S&T as a unique IGO in this sector. This initiative of solar system is aligned with the United Nations Sustainable Development Goals 7, 12, & 13 pertaining to affordable and clean energy, responsible consumption and production and climate change.

It is pertinent to mention that COMSATS, interalia, aligns its activities with SDGs as an objective of the Organization, aimed at assisting member states endeavors towards attaining the UN SDGs by 2030. In the process COMSATS has set a practical example of itself by adopting renewable energy sources.

**Why Renewable Energy Matters**

The telecommunications and internet

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services sector is among the fastest-growing energy consumers in the world. Servers, routers, power amplifiers, and HVAC systems operate around the clock, driving up electricity bills and carbon footprints simultaneously. Relying on grid electricity particularly in regions where the energy mix is heavily coal or gas dependent means that each gigabyte served comes at an environmental cost.

Solar energy fundamentally disrupts this dynamic. It is clean, inexhaustible during daylight hours, and increasingly cost-competitive. Solar adoption directly reduces dependence on the utility grid, shields the entity / organization from volatile electricity tariffs, and signals to customers and stakeholders a genuine commitment to sustainability. Beyond corporate optics, it directly reduces greenhouse gas emissions – a critical concern as climate change threatens global infrastructure and the communities.

**Understanding the Emission Factor and Carbon Savings**

One of the most compelling justifications for installing solar is the reduction in carbon dioxide ($CO_2$) equivalent emissions. This is quantified using the power emission factor, which represents the amount of greenhouse gas emitted per unit of electricity generated from the grid, expressed in kilograms of $CO_2$ per kilowatt-hour (kg $CO_2$/kWh).

$CO_2$ emissions of an electrical system is:

**Annual $CO_2$ Emissions (kg) = Annual Energy Consumption (kWh) × Emission Factor (kg $CO_2$/kWh)**

The city of Islamabad typically gets about 5 – 6 peak sun hours per day on average over the year (the hours when solar panels produce near-maximum power) based on solar insolation data for the region. Peak sun hours are the equivalent full-power hours of sunlight a solar system receives daily and not simply total daylight so 12 hours daylight cannot be considered as 12 peak hours.

Theoretically, a 167 kW solar system with 2,160 operating hours per year (06 hour peak hour light per day) is expected to generate roughly 292,730 kWh (292.7 MWh) annually. A standard system efficiency factor of 80% (0.80) is applied to account for inverter losses, cable losses, dust, temperature derating, and other real-world factors.

**Daily Output**
167 kW × 06 hours × 0.80 = 802 kWh/day
**Monthly Output**
802 kWh/day × 30 days = 24,060 kWh/month (approximately 24.06 MWh per month)
**Annual Output**
802 kWh/day × 365 days = 292,730 kWh/year (approximately 292.7 MWh per year)

* These are just estimated figures; solar productivity depends on multiple factors and results can be different.

**$CO_2$ Avoided (kg) = Annual Solar Generation (kWh) × Grid Emission Factor (kg $CO_2$/kWh)**

The Grid Emission Factor varies by country depending on their energy mix. For Pakistan, the national grid emission factor is approximately 0.4716 kg $CO_2$/kWh (as per NEPRA and international carbon accounting standards).

**Calculation**
$CO_2$ Avoided = 292,730 kWh × 0.4716 kg $CO_2$/kWh
$CO_2$ Avoided = 138,031.08 kg $CO_2$/year
Converting to Metric Tons (÷ 1,000):
≈ 138 Metric Tons of $CO_2$ per year
1 carbon credit = 1 metric ton of $CO_2$ emission

This emission reduction is not merely symbolic. It represents a direct, measurable contribution to Pakistan's Nationally Determined Contributions (NDCs) under the Paris Agreement, and to the global climate goals embedded in SDG 13 (Climate Action), making the solar project a dual-purpose achievement.

**The Economy Factor: Making the Financial Case**

Beyond environmental impact, the economy factor of this solar installation is equally compelling. The economics of solar energy for commercial and industrial consumers rest on several pillars: capital cost recovery, operational savings, and return on investment (ROI).

The installation of 167 kW solar system at CIS has reduced electricity bill to 50%. Pattern over longer period may present more accurate picture.

Equally important is the stabilization of operating expenses. For an ISP whose profitability depends on maintaining low overheads while expanding network capacity, predictable energy costs provide significant competitive advantage.

**A Replicable Model for the Sector**

The 167-kW solar installation at COMSATS is more than a single project — it is a proof of concept for an entire industry. As internet penetration grows and data consumption accelerates, the sector's energy footprint will only expand. SDG 7 and 12 demands that this growth be decoupled from carbon emissions, and solar energy is the most practical tool available today to achieve that decoupling.

By investing in clean energy, COMSATS incumbent leadership has demonstrated that profitability and planetary responsibility are not in conflict — they are, in fact, inseparable pillars of a sustainable future. Other ISPs, telecom companies, and technology firms would do well to follow this example, transforming every rooftop into a power plant and every kilowatt-hour saved into a step closer to a cleaner and environment safer world.

## Scholarships offered by COMSATS University Islamabad (CUI), Pakistan

COMSATS University Islamabad (CUI), Pakistan, offers MS & PhD Scholarships for students and researchers belonging to COMSATS' Member States and partner countries. The scholarships are offered in the following key programs: Computer Science, Management Science, Electrical Engineering, Biosciences, Mathematics, Physics, and Meteorology.

The relevant details, including terms and conditions, eligibility criteria, admission procedure and schedule, application form, etc.

Eligibility Criteria for MS Programs (Subject-wise): https://international.admissions.comsats.edu.pk/Home/EligibilityCriteria?pt=MS

Eligibility Criteria for PhD Programs (Subject-wise): https://international.admissions.comsats.edu.pk/Home/EligibilityCriteria?pt=PHD

Online Application:
https://comsats.org/scholarship-application-form/

For further details, please visit: www.comsats.org or write to: farhan@comsats.org.

## International Training Workshop on Disaster Risk Reduction and Green Development for China-Pakistan Economic Corridor (CPEC)

From 18 - 22 June, 2026 at COMSATS University Islamabad (CUI), Islamabad. China-Pakistan Joint Research Center on Earth Sciences (CPJRC), with support of the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO), and in partnership with COMSATS, ANSO on Disaster Risk Reduction (ANSO-DRR), and the UNESCO Chair for Mountain Disaster Risk Reduction and Resilience, is organizing a five-day international training workshop. The Workshop aims to build technical capacity and foster regional collaboration among researchers, scientists, and professionals working on disaster risk reduction, climate resilience, and green development along the CPEC corridor.

For further details and updates, please visit the COMSATS' Website: **https://comsats.org**

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