

ANNUAL REPORT 2024







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

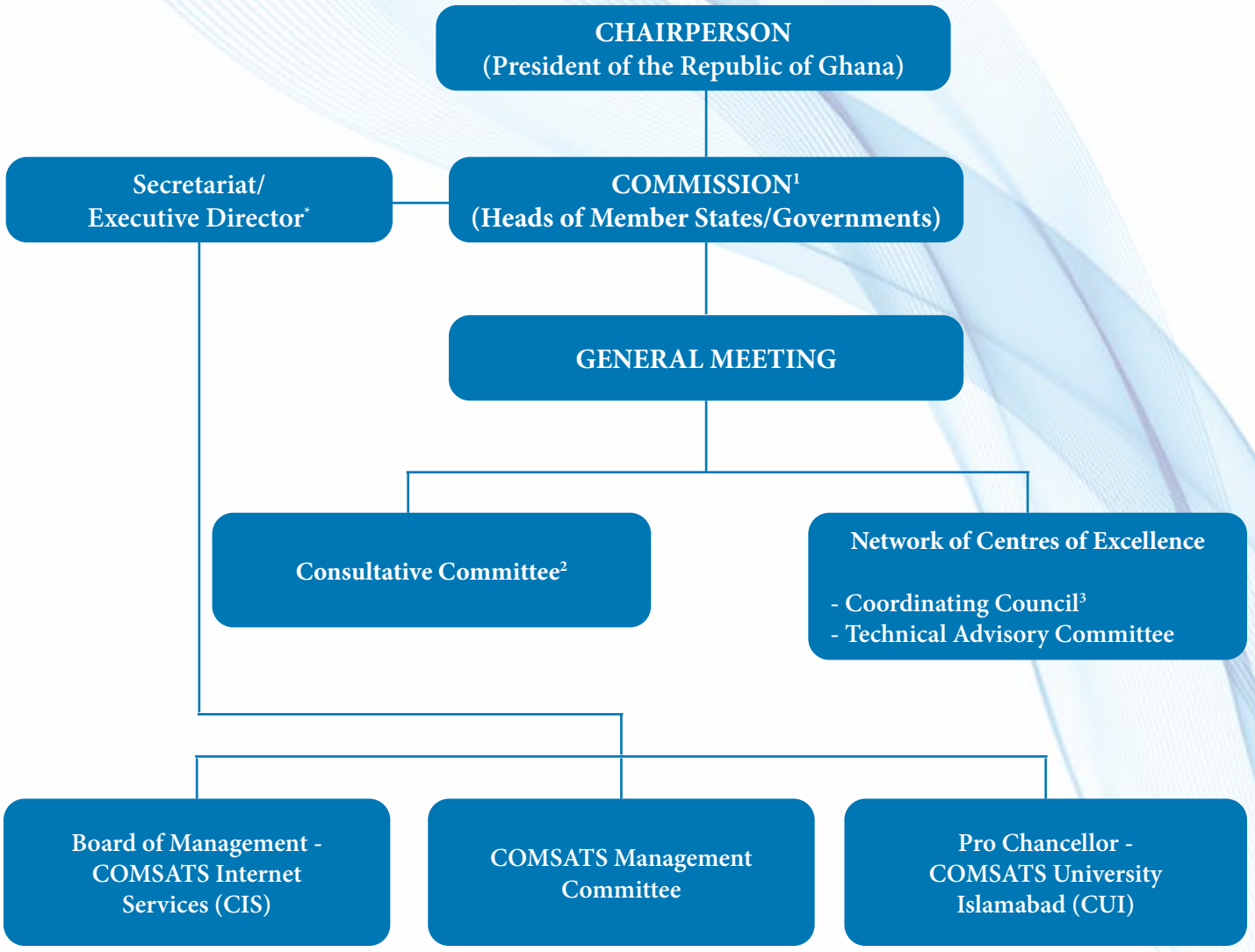
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July 2025

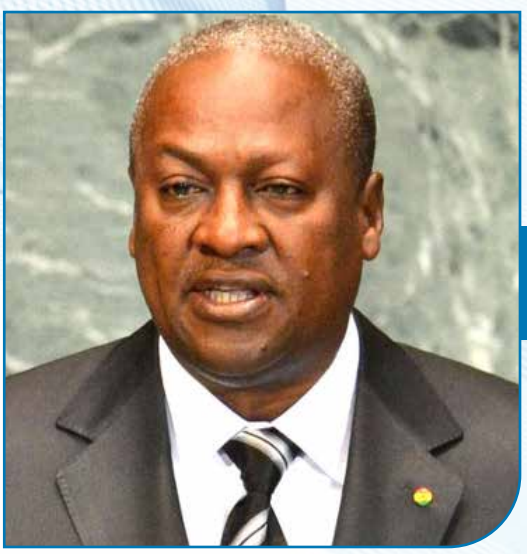


Commission on Science and Technology for Sustainable Development in the South (COMSATS)

ORGANIZATIONAL STRUCTURE



* Also ex-officio Secretary to 1, 2 and 3



Hon. John Dramani Mahama

President of the Republic of Ghana
Chairperson COMSATS

The President of Ghana, Hon. John Dramani Mahama, is the incumbent Chairperson of COMSATS.

Hon. John Dramani Mahama is the sixth President of the Fourth Republic of Ghana. He was also the fourth President of the Fourth Republic of Ghana, having previously occupied the high office of President between January 7, 2013 and January 6, 2017.

Born 66 years ago to Mr E. A. Mahama and Madam Abiba Nnaba in Damongo, in the now Savannah Region of Ghana, Mahama made history as Ghana's first President to serve at all political levels. He was a Member of Parliament for Bole-Bamboi Constituency, Deputy Minister for Communications, Minister for Communications, Vice President of the Republic of Ghana, and President of the Republic of Ghana.

Mahama considers the combination of history, communications, and social psychology—courses he studied for his undergraduate and postgraduate degrees—to have profoundly shaped his views, thoughts, and understanding of the human condition and contributed significantly to his development as a person.

Under President Mahama's first administration, Ghana witnessed massive infrastructure development across all sectors of the economy, including education, health, ports and harbours, aviation, rail, oil and gas, ICT, and many more. His vision and strategic investments in these areas solidly positioned the country as a Lower-Middle-Income Country for its next development phase.

Beyond investments in socio-economic infrastructure, President Mahama is passionate about investing in people. This amply reflects his commitment to social justice and equity, particularly through his lauded efforts to advance the interests of girls and women across all spheres. Notably, Ghana attained gender parity in basic education under his leadership.

John Mahama further demonstrated his commitment to women's empowerment by appointing several women to prominent roles in his administration. In 2020, he made a groundbreaking decision to nominate Professor Naana Jane Opoku-Agyemang as his Vice-presidential candidate,

marking a first for a major political party in Ghana. He repeated this bold choice in 2024, and with their victory, Ghana is welcoming its first female Vice President.

Mahama is an avid reader, author, and historian. Over the course of his career, he has written for several newspapers and authored several publications. He has also published a memoir, his first book, titled 'My First Coup d'État and Other True Stories from the Lost Decades of Africa.'

President Mahama's love for reading and thirst for knowledge are complemented by his strong interest in technology and agriculture. His connection to agriculture is personal, longstanding, and rooted in his upbringing. His father was a prominent rice farmer, educator, and Minister in Dr Kwame Nkrumah's administration.

President Mahama is keen on increasing agricultural productivity and strives to motivate the younger generation to approach farming as a viable and profitable business, particularly by leveraging technology and value addition to maximize its potential.

President Mahama is a former Chairperson of the Economic Community of West Africa States (ECOWAS) Commission. A strong proponent of intra-African trade, he is a former Chairperson of the African Union's High-Level African Trade Committee. He played an instrumental role in laying the foundation for the Africa Continental Free Trade Area (AfCFTA), whose secretariat is now in Ghana.

President Mahama was also the first Co-chair of the United Nations Advocacy Group on the Sustainable Development Goals and is the current Chair of the TANA Forum, a high-level forum on security in Africa headquartered in Ethiopia.

In recognition of his sterling contributions as a leader and role model on the African continent and around the globe, John Mahama has been conferred with several honorary doctoral degrees from distinguished universities worldwide, including Ekiti State University, Ilorin University, and Igbinedion University in Nigeria; the University of Aberdeen in Scotland; and the Lyon Business School in France.

With his resounding victory in the December 2024 elections, John Dramani Mahama becomes the first president in Ghana's history to be democratically elected to a non-consecutive second term.

President Mahama is an exemplary family man with strong Christian values. He has been happily married to Lordina Dramani Mahama for over thirty-two years.

Source: https://presidency.gov.gh/biography/

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Acknowledgement

The editorial team of COMSATS Annual Report thankfully acknowledges contributions of officials from COMSATS Secretariat, COMSATS Internet Services and COMSATS Centres of Excellence, without which this report could not have been possible.



Chief Editor
Amb. Dr. Mohammad Nafees Zakaria
Executive Director COMSATS



Compiled, Designed and Developed by
Mr. Imran Chaudhry

ABOUT COMSATS

ABOUT COMSATS

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) was established in October 1994 as an international/inter-governmental organization to act as a global forum of developing countries for their sustainable socio-economic uplift through applications of science and technology. The legendary person behind the idea of COMSATS was a renowned Pakistani Physicist, Scientist and Nobel Laureate, Prof. Dr. Abdus Salam. COMSATS' current membership comprises of 27 countries located in the continents of Africa, Asia, Latin America (and Eurasia), representing a population of over one-third of the world's total.

These countries have diverse social, cultural, economic, political, educational and religious backgrounds, and also differ greatly in their scientific and technological capacities. Their common aspirations for development through cooperation in S&T brought them together on the platform of COMSATS. COMSATS' major source of scientific and technological strength stems from its network of international S&T Centres of Excellence, which comprises of 25 reputed R&D and S&T, and higher education institutes in developing countries, predominantly COMSATS Member States.

As stipulated in the organization's statutes, COMSATS Secretariat is permanently located in Islamabad, Pakistan, with its operation and expenditures supported through generous grants from the Government of Pakistan. The membership of COMSATS is open to all developing countries. The organization also aspires to further broaden its horizons to all countries and institutions, including those from the North.

MISSION

The mission of COMSATS is to 'help create a world where all nations/states are at peace with one another and capable of providing a good quality of life to their populations in a sustainable way, using modern scientific and technological means'.



OBJECTIVES

Major objectives and functions of COMSATS are:

- To sensitize the countries in the South to the centrality of science and technology in the development process, to the adequate resource allocation for research and development, and to the integration of science and technology in the national and regional development plans;
- To support the functioning and activities of the Network of International Science and Technology Centres for Sustainable Development in the South, established at the foundation meeting of the Commission;
- To support other major initiatives designed to promote indigenous capacity in science and technology for science-led sustainable development, and to help mobilise long-term financial support from international donor agencies and from government/ institutions in the North and the South to supplement the financing of international scientific projects in the South;
- To provide leadership and support for North-South and South-South cooperative schemes in education, training and research, such as the proposal to set up programmes of scholarships for research at centres of excellence in the South; and
- To support the relevant programmes and initiatives of major scientific organisations working for the development and promotion of science and technology in the South.

Focal Ministries in Member States



Bangladesh
Ministry of Science and Technology



China
Ministry of Science and Technology



Colombia
Ministry of Science, Technology and Innovation



Egypt
Academy of Scientific Research and Technology



The Gambia
Ministry of Higher Education, Research, Science and Technology



Ghana
Ministry of Environment, Science, and Technology



Iran
Ministry of Science, Research and Technology



Jamaica
Ministry of Science, Energy and Technology



Jordan
Higher Council for Science and Technology



Kazakhstan
Ministry of Science and Higher Education



Korea DPR
State Academy of Sciences



Morocco
Ministry of Higher Education, Scientific Research and Innovation



Nigeria
Federal Ministry of Science, Technology and Innovation



Pakistan
Ministry of Science and Technology



Palestine
Ministry of Higher Education and Scientific Research



Philippines
Department of Science and Technology



Senegal
Ministry of Higher Education, Research and Innovation



Somalia
Ministry of Education, Culture and Higher Education



Sri Lanka
Ministry of Industry



Sudan
Ministry of Higher Education and Scientific Research



Syria
Ministry of Higher Education and Scientific Research



Tanzania
Ministry of Education, Science & Technology



Tunisia
Ministry of Higher Education and Scientific Research



Türkiye
The Scientific and Technological Research Council of Türkiye (TUBITAK)



Uganda
Uganda National Council for Science & Technology



Yemen
Ministry of Higher Education and Scientific Research



Zimbabwe
Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development



Ambassador Dr. Mohammad Nafees Zakaria
Executive Director COMSATS

Ambassador Dr. Mohammad Nafees Zakaria assumed charge as the Executive Director COMSATS in November 2022. By virtue of his position, he is also the ex-officio Secretary to COMSATS' statutory bodies, the Commission, the Consultative Committee and the Coordinating Council. Moreover, he is ex-officio Pro Chancellor-II of COMSATS University Islamabad (CUI), and Chairman Board of Management of COMSATS Internet Services (CIS). During his illustrious diplomatic career of over 30 years, he, inter alia, represented Pakistan as High Commissioner to the UK (2019-20), and Malaysia (2017-19). At the Ministry of Foreign Affairs in Islamabad, he held important senior positions, including Additional Foreign Secretary / Spokesperson, Director General for South Asia and SAARC, and Director General for Europe. Amb. Zakaria was awarded honorary degree of Doctorate in Arts & Letters by Forman Christian College, a Chartered University, in recognition of his services to the country and the people irrespective of their religious affinity.

FOREWORD

Year 2024 has been more vibrant and productive in terms of activities organized by the COMSAT Secretariat Team. In addition to a number of scientific activities in diverse fields, the year under reporting saw three very impactful and far reaching milestone activities, viz. 25th Coordinating Council meeting, Training Workshop on Metagenomics – one of its kind, and most significantly highly substantive participation at COP29 in Baku, Azerbaijan.

China, a founding member of COMSATS and contributor of two Centres of Excellence, hosted the 25th Coordinating Council meeting in Tianjin in September 2024. Major decisions marked the proceedings such as expansion of the Secretariat Organizational structure, emphasis on R&D, and encouragement for new initiatives of EV, Nanotech Lab, AI & IT Training Centre, undertaken by the COMSATS Secretariat.

At COP29, organizing of 13 sideline events brought experts from 40 Climate Activity Institutions/Organizations from across the world; laid down a strong foundation of formal cooperative relations with ICESCO, and a range of national organizations of various countries, particularly the Host country, Pakistan. It set in motion a chain of activities with multilateral forums and other entities including the UN, Commonwealth and internationally affiliated FFC, NDMA, NDRMF, and many more.

Metagenomics event in Islamabad, Pakistan, set the tone and opened up avenues in Genetic Engineering & Biotechnology, especially in viral disease surveillance, in collaboration with International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy. This activity received high appreciation from the scientist community in Pakistan and other participating countries.

In an era defined by rapid technological advancement and intersecting global crises—from climate change to widening innovation gaps—the imperative for collective action has never been greater. As a catalyst for South-South and Triangular Cooperation, COMSATS remains steadfast in harnessing science, technology, and innovation (ST&I) to bridge developmental divides and foster equitable progress. The year 2024 was marked by remarkable progress for COMSATS on several strategic fronts.

As an intergovernmental organization of 27 developing countries and a network of 25 International S&T Centres of Excellence, COMSATS reinforced its role as a regional and international platform for collaborative development. We deepened engagements with national governments, international organizations, and academic institutions while advancing our collective mission of inclusive, sustainable development through science and technology.

COMSATS' capacity-building and knowledge-sharing efforts grew stronger in 2024 with nearly 30 physical and online training events organized across diverse thematic areas. These included industrial biotechnology, telehealth, AI, clean energy, digital governance, disaster resilience, and sustainable agriculture.

Notably, our expanding collaborations with entities such as the Commonwealth Secretariat, ICESCO, ECO-Science Foundation, and ANSO reflect COMSATS' growing global recognition and its appeal as a trusted platform for science

diplomacy and multilateral cooperation.

Climate action remained a cornerstone of COMSATS' 2024 agenda. Our strategic role in COP29 preparatory dialogues alongside partners like ICESCO and the Living Indus Initiative amplified Global South voices in critical debates on water security, biodiversity, and just energy transitions. In addition to our focus on water security, biodiversity, and low-carbon transitions, represent our enduring commitment to sustainable development.

COMSATS' programmatic thrusts have evolved to include cutting-edge technologies such as electric vehicles, AI applications, genomic sequencing pursuit, and precision agriculture. We are proud to report the successful development of indigenous EV retrofitting kits—an innovation that combines local ingenuity with sustainable urban mobility.

This report chronicles the wide spectrum of COMSATS' undertakings and achievements during 2024. From impactful training programs and high-level diplomatic engagements to strategic international linkages and advocacy on global platforms, COMSATS continues to fulfill its mandate of fostering inclusive scientific progress.

I extend my sincere gratitude to the Chairpersons of COMSATS Coordinating Council and Consultative Committee, our Centres of Excellence, members of the Technical Advisory Committee, international partners, and the dedicated team at COMSATS Secretariat. Their enduring support and contributions have allowed COMSATS to grow in relevance and impact, ensuring that science remains a prime mover of development and diplomacy.

As we reflect on COMSATS' 2024 journey, I invite our Member States and partners to join us in upscaling these efforts into transformative action. Let this report serve not only as a record of progress but as a blueprint for deeper collaboration, in which science and solidarity pave the way for a more resilient and inclusive tomorrow.



Prof. Dr. Ashraf Shaalan
Chairperson of COMSATS Coordinating Council

Prof. Ashraf Shaalan was elected as the Chairperson of COMSATS Coordinating Council during its 19th Meeting held in May 2016, in Islamabad, Pakistan, when he was the President of COMSATS Centre of Excellence in Egypt, National Research Centre (NRC). During the Council's 22nd Meeting (2019), Prof. Shaalan was given honorary lifetime membership to the Council. In January 2023 Council Meeting (24th), he was appointed the Chairperson of the Council with unanimous approval. A widely published academician, Prof. Shaalan is member of the Egypt's Presidential Specialized Council for Education and Scientific Research of Egypt and has previously served as the Vice-President of the Academy of Scientific Research and Technology apart from numerous other distinguished appointments and awards.

FROM THE CHAIRPERSON COMSATS COORDINATING COUNCIL

Since the COMSATS Coordinating Council (CCC) inaugural meeting in Islamabad, Pakistan, 30 years ago, COMSATS centers of excellence have collaborated to improve scientific and technological cooperation among COMSATS member states. The centers of excellence, the fundamental core elements of the CCC, have amazingly kept the same to enhance scientific capability in the South, despite the new challenges that most of the member states are confronting. Over the past year, our council has labored to accomplish the objectives of COMSATS' short- and long-term programs, based on the earnest efforts and practical approach of COMSATS headquarters. Accordingly, COMSATS has become an important information and communications technology hub. In addition to sponsoring a wide range of research and training programs for scientists from its member states, it effectively fosters interaction among its growing network of S&T centers of excellence and is becoming a more powerful and effective advocate for investments in science and technology.

Nevertheless, it would be a mistake to say that COMSATS can rest on its glories. To build on the progress made in S&T development, increase the scope and depth of COMSATS' research and training programs, and persuade governments that sustained investment in science and technology is essential to their nations' future prosperity, much more work must be done to secure sufficient levels of core and programmatic funding. There is a strong need for effective scientific centers of excellence able to implement the COMSATS' vision. The same is true of the activities described in this report, which not only offer a welcome summary of COMSATS' achievements but also serve as a springboard for achieving the objectives that we eloquently stated throughout our lives.

I would like to express my gratitude to the Tianjin Institute of Industrial Biotechnology (TIB) for hosting the 25th Meeting of the CCC in September 2024 and for the wonderful, well-organized, and fruitful event. I sincerely appreciate the tremendous efforts made by the team in the COMSATS secretariat and the Centers of Excellence to adjust to the challenging conditions over the last year and complete their assigned tasks. I want to thank everyone for a fantastic 2024 and look forward to working with you all to continue breaking down boundaries in 2025.

Members of COMSATS Coordinating Council*



Dr. Samina Ahmed
Chairman BCSIR, Bangladesh



Dr. Cristhiane Amancio
D.G. Embrapa Agrobiologia, Brazil



Prof. Lin Zhaohui
Director ICCES, China



Prof. Dr. Hua Xiang
Director General TIB, China



Prof. Dr. Eduardo Posada F.
Director CIF, Colombia



Prof. Mamdouh Moawad
President NRC, Egypt



Prof. Herbert Robinson
Vice Chancellor UTG, Gambia



Prof. Paul Pinnock Bosu
Director-General CSIR, Ghana



Prof. Bambang Pramujati
Rector ITS, Indonesia



Prof. Alireza Ashori
President IROST, Iran



Prof. Charles N. Grant
Director General ICENS, Jamaica



HRH Princess Sumaya bint El Hassan
President RSS, Jordan



Prof. Dr. Zhanseit Tuimebayev
Rector KazNU, Kazakhstan



Prof. Promise Mebine
Director NMC, Nigeria



Prof. Dr. Sajid Qamar
Acting Rector CUI, Pakistan



Prof. Dr. M. Raza Shah
Director ICCBS, Pakistan



Prof. Dr. Imad F. S. Abukishek
President AQU, Palestine



Prof. Alioune Badara Kandji
Rector/President UCAD, Senegal



Prof. Pedro Mercado Pacheco
Rector UGR, Spain



Prof. Ilmi G. N. Hewajulige
Director General ITI, Sri Lanka



Dr. Itmad Awad Al-Hassan
Director General IRCC, Sudan



Prof. Omran KOUBA
Director HIAST, Syria



Prof. M. M.A. Mtambo
Director General TIRDO, Tanzania



Pr. Hakim GABTNI
Director General CERTE, Tunisia



Prof. Dr. Orhan AYDIN
President TUBITAK, Türkiye

* As of July 2025

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CORE ACTIVITIES OF COMSATS SECRETARIAT

COMSATS Secretariat provides secretarial support to both the Commission and the Network of Centres of Excellence. It is, inter alia, responsible for regularly holding statutory body meetings as well as following up on their deliberations and decisions. The Secretariat also executes COMSATS' programmes and activities in partnership with other international agencies, national S&T institutions, R&D organizations, members of academia and scientific community across the world. Other core activities of the Secretariat pertain to: pooling and management of financial resources; enhancing the membership of COMSATS and its Network; and special liaison with the host country, apart from regular engagement with all member states.



Group Photo of Participants of the 25th Meeting of COMSATS Coordinating Council was successfully held on 10-12 September 2024, in Tianjin, China

The 25th Meeting of COMSATS Coordinating Council

The Coordinating Council is an important organ of COMSATS' Network of International S&T Centres of Excellence, which comprises the Heads of 25 Centres of Excellence. The Council is an effective platform for South-South and Triangular technical cooperation for realizing the organization's overall objective of achieving sustainable socio-economic development in the South. The Council meets once annually to deliberate on matters relating to the ongoing and future programmes and activities of the organization.



Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, addressing the Inaugural Session of the 25th Meeting of COMSATS Coordinating Council

The 25th Meeting of COMSATS Coordinating Council was successfully held on 10-12 September 2024, in Tianjin, China. The meeting was hosted by one of COMSATS' Centres of Excellence in China, the Tianjin Institute of Industrial Biotechnology (TIB).

This annual meeting had participation of the Council members or their representatives from 16 affiliated Centres of Excellence of COMSATS, i.e. ICCES-China, TIB-China, UTG-The Gambia, NRC-Egypt, IROST-Iran, ITS-Indonesia, RSS-Jordan, KazNU- Kazakhstan, NMC-Nigeria, ICCBS- Pakistan, CUI-Pakistan, ITI-Sri Lanka, IRCC-Sudan, HIAST-Syria, TIRDO- Tanzania, and TUBITAK-Turkiye. Moreover, representatives belonging to COMSATS' international partner organizations, namely ANSO, ECOSF, INSME, PIDF, South Centre and TWAS, as well as members of COMSATS Technical Advisory Committee (TAC)



attended the meeting as observers. Officials of COMSATS Secretariat also attended the meeting.

Opening Ceremony

The inaugural ceremony was held on 10th September 2024. Speaking at the occasion, Director, Division of Multilateral Cooperation, Ministry of Science and Technology, China, Mr. Dong Keqin, stated that South-South Cooperation is an indispensable part of international multilateral development cooperation and an important channel for developing countries to achieve self-reliance and progress. He expressed pleasure on collaborating with COMSATS for achievement of common objectives.

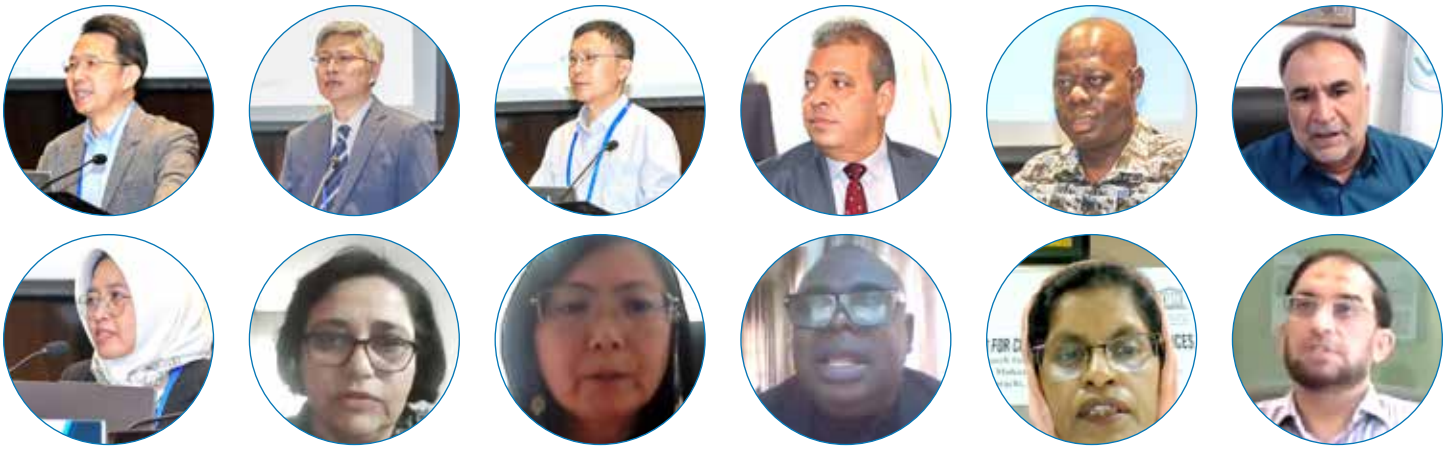
Prof. Dr. Liu Weidong, Director-General, Bureau of International Cooperation, Chinese Academy of Sciences (CAS), China, highlighted that the Global South is faced with various challenges. He informed that as a leading national institution, CAS attaches high importance to international cooperation. Prof. Weidong, being the incumbent Executive Director of ANSO, also highlighted the key activities of ANSO and its collaboration with COMSATS.

Prof. Dr. Ashraf Shaalan, Chairperson, COMSATS Coordinating Council affiliated with the National Research Centre (NRC), Egypt, stated that COMSATS Member States have the capacity to develop scientifically which is a noble cause. He was of the view that financial resource constraint should not be an impediment. He highlighted that COMSATS Centres of Excellence are actively collaborating with each other in various fields, and much more can be achieved by capitalizing on collective efforts. He urged greater and focused cooperation activities among the COMSATS Centres of Excellence. He identified low-emission transportation, climate change and renewable energy as NRC's areas of interest to benefit from South-South and Triangular Cooperation in the long term.

Ambassador Dr. M. Nafees Zakaria, Executive Director COMSATS, stated that inventions and knowledge have brought a windfall of wealth to the technologically advanced nations in the Global North. He said that universalization of technologies and knowledge was the only way to disallow those with upper hand in technology from exploiting it to their advantage. He appreciated the Chinese Leadership, President Xi Jinping, who, at a BRI event, undertook that China will share its technologies and knowledge with everyone'. Ambassador Zakaria highlighted that during the past two years, COMSATS cultivated strategic partnerships, supported important R&D projects and innovative initiatives in emerging S&T areas. He underscored that the pooling of resources and sharing of expertise among COMSATS nations as key to the collective success. He called for more investment in R&D, which created a defining line between the developed and developing worlds.



Council members and other participants are attending the Inaugural Session



Prof. Dr. Xiang Hua, Legal representative, Deputy Director-General, TIB, highlighted that TIB specializes in synthetic biology and biomanufacturing, and has built a strong reputation for biotechnology development and transfer. He informed that many green bioprocess technologies developed have been successfully industrialized, significantly advancing the bioeconomy in China across various fields. He expressed pleasure on hosting the Council meeting, hoping to further enhance TIB's collaboration with other Network members.

Technical Sessions

This major platform for South-South scientific cooperation is deliberating upon a 13-point agenda, inter alia, focusing on fostering collaborative research and development projects, capacity building programmes, and developing tech-based solutions for addressing various global challenges. A panel discussion on Biomanufacturing Cooperation for a Better Tomorrow in the Global South is being held in conjunction with the Council meeting on 12th September, which is UN Day for South-South Cooperation, giving the events a befitting conclusion.

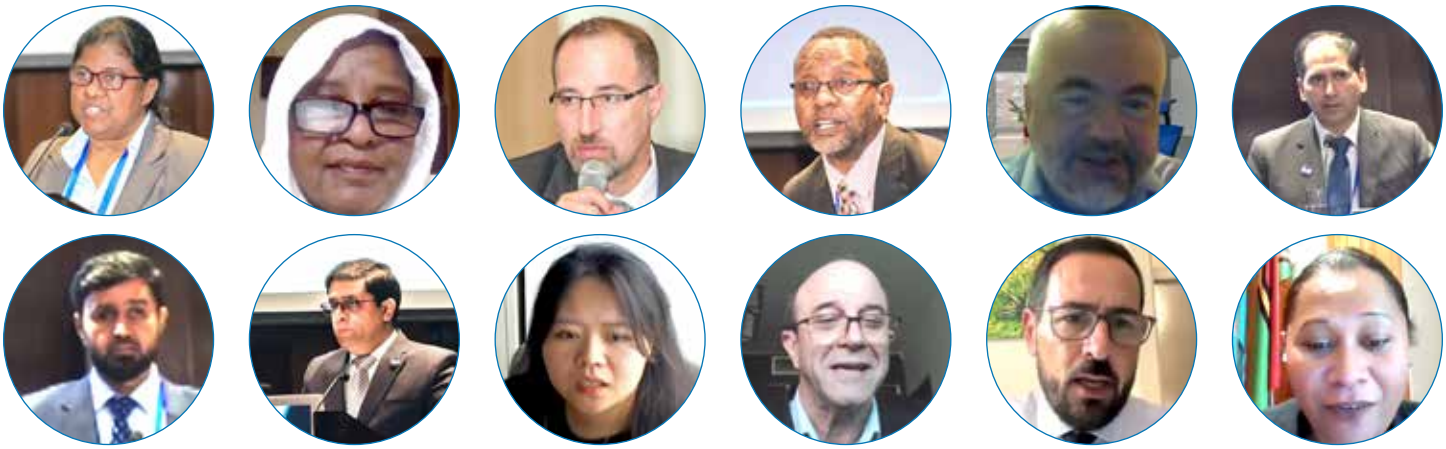
During the technical sessions of the meeting, the Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, presented COMSATS' Annual Activity Report (February 2023 – September 2024) and future plans, which were endorsed and appreciated by the Council. The Coordinating Council also expressed satisfaction on the implementation status of the decisions of 23rd Council meeting, which was presented by Mr. Farhan Ansari, Deputy Director (Programmes), COMSATS Secretariat. The Council also approved the Minutes of the 23rd Meeting of COMSATS Coordinating Council.

The Heads/representatives of the Centres of Excellence made presentations on their activities related to South-South and Triangular Cooperation during 2023-24, including the ongoing interaction and collaboration with other Centres of Excellence, as well as future plans for COMSATS' Network.

Moreover, a number of representatives of COMSATS' partner international organizations made presentations, highlighting their ongoing programmes and activities as well as possibilities of



Technical Session of 25th Council Meeting in progress



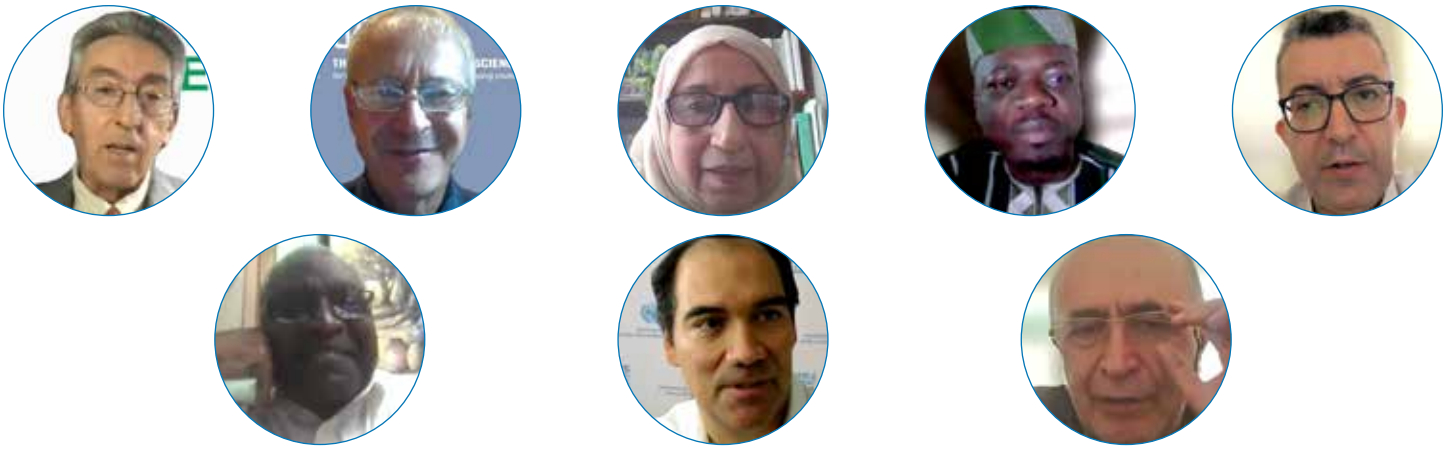
collaboration with COMSATS.

The Council members deliberated upon the ongoing programmes of COMSATS, including COMSATS Joint Centre on Industrial Biotechnology (CCIB), COMSATS Centre for Climate and Sustainability (CCCS), capacity building activities, MS / PhD Scholarships and Post-doctoral Fellowships, collaborative R&D projects, COMSATS' Digital and Global Health Program, ICT Services, etc. The Additional Director/Incharge Programmes, COMSATS Secretariat, Mr. Irfan Hayee, shed light on the ongoing programmes of COMSATS in order to aid the discussions of Council members.

The Council appreciated the holding of 29 physical or online capacity building events by COMSATS Secretariat in collaboration with Centres of Excellence and international partner organizations, which mainly benefited the scientists, researchers, academicians, engineers and technicians belonging to the Member States. The Council was pleased to learn about the progress made by the COMSATS Joint Centre on Industrial Biotechnology (CCIB), at the Tianjin Institute of Industrial Biotechnology (TIB) that aims to promote meaningful cooperation among COMSATS' Member Countries and Centres of Excellence in the field of industrial biotechnology. The progress report on CCIB was presented by its Director, Prof. Dr. Jibin Sun. The Council also noted with appreciation the activities

Participants of the 25th Coordinating Council Meeting

- Prof. Dr. Ashraf H. Shaalan, Chairperson of COMSATS Coordinating Council, Former President National Research Centre (NRC), Egypt.
- Prof. Dr. Lin Zhaohui, Director, International Center for Climate and Environment Sciences (ICCES), China.
- Prof. Dr. Hua Xiang, Legal representative, Deputy Director-General, Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences (CAS), China.
- Prof. Dr. Jibin Sun, Professor, Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences, China.
- Prof. Zhang Dawei, Committee Member, Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences, China.
- Prof. Hosam El-Sayed, Assistant Vice President, National Research Centre (NRC), Egypt.
- Mr. Ousainou Corr, Director of Finance, University of The Gambia (UTG), The Gambia.
- Prof. Hassan Zamanian, Deputy Minister and President, Iranian Research Organization for Science and Technology (IROST), Iran.
- Prof. Nurul Widiastuti, Vice Rector for Academic and Student Affairs, Sepuluh Nopember Institute of Technology (ITS), Indonesia.
- Eng. Abeer Arafat, Senior Assistant to the President for Science, Technology & Innovation Liaison, Royal Scientific Society (RSS), Jordan.
- Dr. Gaukhar Datkhabayeva, Department of Biophysics Biomedicine and Neuroscience, Al-Farabi Kazakh National University (KazNU), Kazakhstan
- Prof. Mebine Promise, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria.
- Prof. Dr. Farzana Shaheen, Director, International Center for Chemical and Biological Sciences (ICCBS), Pakistan.
- Prof. Zaheer Ul-Haq, Professor, PMDC, International Center for Chemical and Biological Sciences (ICCBS), Pakistan.
- Dr. Hammad Omar, Incharge International Office, COMSATS University Islamabad (CUI), Pakistan.
- Prof. (Ms.) Ilmi G. N. Hewajulige, Director General, Industrial Technology Institute (ITI), Sri Lanka.
- Dr. Itmad Awad Al-Hassan, Director General, Industrial Research and Consultancy Centre (IRCC), Sudan.
- Dr. Chadi Albitar, Head of Scientific Cooperation, Higher Institute for Applied Sciences and Technology (HIAST), Syria.
- Engr. Humphrey Peter NDOSSI, Director of Industrial Research, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania.
- Dr. Orkun Hasekioglu, The Scientific and Technological Research Council of Türkiye (TUBITAK), Türkiye.



undertaken by the COMSATS Centre for Climate and Sustainability (CCCS) with regard to building capacity of the Member States and facilitate collaboration among them in the areas relevant to climate change and sustainable development.

The Council appreciated COMSATS Secretariat's efforts for implementing new initiatives, which were approved in the last Coordinating Council meeting, including establishment of COMSATS R&D Fund; development of COMSATS Web-portal; development of COMSATS Catalog of Products, Technologies and Services; development of COMSATS Resource Persons Directory; initiation of collaborative programmes for IT and digital skills development of youth; and provision of ICT Services to Member States. The Council appreciated the academic, research and capacity-building activities undertaken by Centres of Excellence during the period since the last Council meeting, as highlighted in their respective presentations.

Having observed the proceedings of the Council meeting and witnessed meaningful discussions, the participating members of COMSATS Technical Advisory Committee (TAC) shared their insights on how to enhance the scope and impact of COMSATS' programmes and activities.

COMSATS Administrative and Financial Matters of COMSATS, came under review by the Council. The Additional Director (Accounts), COMSATS Secretariat, Mr. Tanveer Aslam, made a comprehensive presentation recapitulating the administrative decisions taken for efficient functioning of the Secretariat as well as related financial matters.

The Council also discussed matters related to the next meetings of COMSATS Consultative Committee and the General Meeting of the Commission. It was decided that the 26th meeting of the Coordinating Council will be hosted by the Tanzania Industrial Research and Development Organization (TIRDO), Tanzania, during 2025. The Council issued a Communiqué (page 08) that inter alia, encouraged the Member Countries and Centres of Excellence to foster bilateral and multilateral partnerships in the areas relevant to sustainable development.

Concluding Ceremony

At the Concluding Ceremony on the second day of the meeting, Prof. Dr. Jibin Sun, expressed pleasure on



Technical Session of 25th Council Meeting in progress



Participants of the Council Meeting during their visit to the laboratories and research facilities of TIB

successfully hosting the meeting, and thanked the attendees for their active participation. He hoped for developing impactful collaboration with other Centres of COMSATS. The Chairperson Coordinating Council thanked TIB for hosting the meeting. He pledged to work closely with COMSATS Secretariat for achieving the objectives of COMSATS Network. On the occasion, the Executive Director COMSATS thanked TIB for making excellent arrangements for hosting the meeting. He appreciated Prof. Shaalan for steering the meeting effectively. He stated that COMSATS Secretariat would make all efforts to facilitate mutually beneficial collaboration among the Network members.

Visit to TIB Laboratories

The participants of the Council meeting visited the laboratories of TIB and its research facilities on 12th September 2024. Prof. Sun conducted the visit and gave briefing about the facilities at the various laboratories of TIB. The participants were shown technical facilities at the National Engineering Laboratory for Industrial Enzymes; Laboratory of Systems Microbial Biotechnology; Laboratory for Industrial Biological Systems and Bioprocessing Engineering; and Tianjin Engineering Center for Biocatalytic Technology. During visit to the laboratories, the respective researchers and scientists at the laboratories highlighted salient achievements of their labs that has created impact in the progress and development of China. The visitors took great interest in the technologies and products developed by TIB, and held in-depth exchanges with TIB scientists. The participants expressed the intent to further strengthen scientific engagement with TIB and promote bilateral and multilateral cooperation among COMSATS Member States.

Technical Advisory Committee (TAC)

COMSATS' Technical Advisory Committee Virtual Session

As part of its ongoing efforts to enhance international scientific and technological collaboration, COMSATS convened a virtual session of its Technical Advisory Committee (TAC) on 18th December 2024. The International Technical Advisory Committee (TAC), a significant resource comprising renowned scientific experts selected by The World Academy of Sciences (TWAS), plays a vital role in delivering independent evaluations, science-driven advice, and strategic recommendations to the COMSATS Secretariat and its Network of International S&T Centres of Excellence. TAC contributes to the development of foresight frameworks for scientific



A virtual meeting of COMSATS Technical Advisory Committee

Communiqué of the 25th Meeting of COMSATS Coordinating Council (10-12 September 2024, Tianjin, China)

The 25th meeting of COMSATS Coordinating Council was held on 10-12 September 2024, at the Tianjin Institute of Industrial Biotechnology (TIB), Tianjin, China.

The meeting was attended by Heads/representatives of 16 Centres of Excellence, namely TIB-China, ICCES-China, NRC-Egypt, UTG-The Gambia, ITS-Indonesia, IROST-Iran, RSS-Jordan, KazNU-Kazakhstan, NMC-Nigeria, ICCBS-Pakistan, CUI-Pakistan, ITI-Sri Lanka, IRCC-Sudan, HIAST-Syria, TIRDO-Tanzania, and TUBITAK-Turkiye.

Under the Chairpersonship of Prof. Dr. Ashraf Shaalan, the participants deliberated upon the thirteen-point agenda and are pleased to unanimously adopt the following:

1. The Coordinating Council appreciates the Annual Activity Report presented by the Executive Director COMSATS, and is pleased to note the progress made since the last Council meeting.

2. The implementation of decisions taken during the Council's 24th meeting (held in January 2023 at ICCBS, Karachi, Pakistan) by COMSATS Secretariat is noted with appreciation. The Council is particularly satisfied with the following initiatives approved by the Council during its last meeting, and urges the esteemed Centres of Excellence to support as well as adequately utilize the same:

    i. Establishment of R&D fund (utilized to support projects in areas of EV and Renewable Energy)
    ii. Development of COMSATS Web-portal
    iii. Development of COMSATS Catalog of Products, Technologies and Services
    iv. Development of a COMSATS Resource Persons Directory
    v. Initiation of collaborative programmes for IT and digital skills development of youth
    vi. Provision of ICT Services to Member States

3. The Council endorses the following new initiatives proposed by the Executive Director:

    i. Establishment of International Division with deputation of scientific and technological experts for promoting Intra-COMSATS Member States dependence as well as revenue generation to support international programmes (white paper to be prepared by COMSATS to be discussed during the next Council meeting)
    ii. Grant of status of an IGO to COMSATS by each Member State with special visa facilitation

4. The academic, research and capacity-building activities undertaken by Centres of Excellence during the period since the last Council meeting, as mentioned in their respective presentations, are highly appreciated.

5. The Council appreciates the holding of 29 physical or online capacity building events in collaboration with Centres of Excellence and international partner organizations, which benefited the scientists, researchers, academicians, engineers and technicians belonging to the Member States.

6. The Council is pleased to learn about the progress made by the COMSATS Joint Centre on Industrial Biotechnology (CCIB), at the Tianjin Institute of Industrial Biotechnology (TIB) in order to promote meaningful cooperation among the COMSATS' Member Countries and Centres of Excellence in the field of industrial biotechnology. The financial support of the Chinese Ministry of Science and Technology and Tianjin Government towards the establishment and activities of CCIB is highly appreciated. The efforts made and leadership provided by Prof. Jibin Sun (TIB), Director CCIB, towards the collaborative activities are highly appreciated.

7. The progress made by the COMSATS Centre for Climate and Sustainability (CCCS) with regard to building capacity of the Member States and facilitate collaboration among them in the areas relevant to climate change and sustainable development are noted with appreciation.

8. Regular publication of COMSATS' Annual Report, Newsletter and other information material brought out by COMSATS during the reporting period deserves praise. The inputs and support of the Centres of Excellence in this regard is highly appreciated.

9. The Council appreciates the participation of members of the Technical Advisory Committee and representatives of international partner organizations, i.e. ANSO, PIDF, the South Centre, ECO-SF, TWAS and INSME, in the meeting as observers. The Secretariat may enhance collaboration with the partner organizations in the areas of mutual interest. The Council endorsed the TAC Members' advice of their regular meeting with COMSATS Coordinating Council.

10. The payment of AMC by China, Jamaica, and Pakistan during the period since the last Council meeting is also noted with appreciation. The Council encourages all other Network members to sensitize their respective governments regarding the importance of regularly making AMC for the financial sustainability of COMSATS.

11. The Council recognizes the significance of other statutory bodies of COMSATS, including the Consultative Committee. The Council requests the Chairperson Consultative Committee to convene the committee's next meeting at the earliest convenience, in order to support the activities and initiatives of COMSATS. The Secretariat may also coordinate with Office of Hon. Chairperson to hold the next General Meeting of the Commission.

12. The Coordinating Council appreciates the excellent arrangements made by the Tianjin Institute of Industrial Biotechnology (TIB), for the 25th Council meeting and for providing generous hospitality to its participants.

13. The Council appreciates TIRDO for graciously offering to host the next (26th) Meeting of Coordinating Council. While acknowledging with gratitude the offer of IROST to host the 26th meeting, the Council would be happy if IROST makes the offer to host the 27th Meeting at its venue. The Council also noted with thanks the offer of ITS-Indonesia to host the Council meeting thereafter.

14. The Side-event titled 'Biomanufacturing Cooperation for a Better Tomorrow in the Global South' organized by TIB on 12th September, on the occasion of UN Day for South-South Cooperation, is praiseworthy. The event facilitated the exchange of knowledge and cooperation among the Centres of Excellence in the field of industrial biotechnology.

15. The preparation of necessary documentation by COMSATS Secretariat and the administrative support provided to TIB for the successful organization of the meeting is praiseworthy.



ED COMSATS, Amb. Dr. M. Nafees Zakaria; senior officials from the COMSATS Secretariat; and CEO NITB, Dr. Baber Majid Bhatti, during a virtual session of the TAC Meeting

coordination and technological innovation within COMSATS' member institutions, while also reviewing existing planning processes, policies, and institutional capacities—when required or upon request—to identify and address capacity-building needs.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, opened the session by reaffirming the organization's mandate to bridge the knowledge and technology divide between the Global North and South through capacity-building and strategic scientific cooperation. He drew attention to the significant outcomes of the 25th Coordinating Council Meeting held in Tianjin, China, and emphasized the need to translate these into concrete actions for the benefit of COMSATS' 27 Member States and its network of 25 Centers of Excellence.

The session brought together senior officials from the COMSATS Secretariat, members of the Technical Advisory Committee (TAC), and a special invitee from the National Information Technology Board (NITB), Pakistan. Participants contributed to a rich and interdisciplinary discussion, drawing on their diverse expertise in areas such as artificial intelligence, industrial policy, biodiversity, antimicrobial resistance, and emerging technologies. The TAC members in attendance included Prof. Dr. Haseena Khan from Bangladesh; Prof. Dr. Ishenkumba Kahwa from the University of the West Indies, Jamaica; Prof. Dr. Bolanle Ojokoh from the Federal University of Technology, Nigeria; Dr. Chabi A. M. Sylvestre from the University of Abomey-Calavi, Benin; Dr. Wejdan Abu-Elhaija from Princess Sumaya University for Technology (PSUT), Jordan; and Mr. Fernando Santiago Rodriguez from the UNIDO Research and Industrial Policy Advice Division, Vienna, Austria.

Among the key interventions, Prof. Dr. Haseena Khan emphasized the development of a regional, human-centric AI framework to reduce technological disparities, while advocating for innovative solutions such as bacteriophages and AI-assisted molecule design to address antimicrobial resistance. Prof. Dr. Ishenkumba Kahwa highlighted the importance of sharing structured science and technology policy frameworks, citing successful examples from Jamaica's ICENS. Prof. Dr. Bolanle Ojokoh underscored the growing role of AI in tackling global challenges such as pandemics, climate change, and drug discovery. Dr. Fernando Santiago Rodriguez proposed the establishment of a dedicated Technology Transfer Office to support the commercialization of research outputs and facilitate dialogue with policymakers. Dr. Baber Majid stressed the need for building knowledge and resource pools through fellowships and academia-industry collaboration to strengthen human capital in the Global South.

The Executive Director COMSATS, Ambassador Zakaria emphasized the need to accelerate efforts towards commercialization and sustainability by finalizing a product catalogue featuring innovations from COMSATS' Centers of Excellence and identifying potential users and markets for these outputs. Addressing concerns regarding innovation ownership, he clarified that the use of patented technologies would require appropriate licensing and royalty arrangements, ensuring protection of inventor rights while enabling broader access.

Strategic priorities for 2025 were identified, including the creation of a robust R&D Fund to support research in emerging technologies; the expansion of COMSATS' Centers of Excellence into the Caribbean and Latin America; the promotion of new partnerships focused on AI, antimicrobial resistance, and multidisciplinary research initiatives. The session also emphasized the importance of knowledge-sharing initiatives aimed at spreading best practices in science, technology, and innovation management across Member States.

The meeting concluded with a strong commitment to ongoing collaboration, with the Executive Director COMSATS expressing appreciation to all participants for their insights. The outcomes of the session will shape the 2025 action plan, with the next TAC meeting proposed for 2025, following the review of implementation progress and member feedback.

Key follow-up actions include the development and circulation of a detailed 2025 Action Plan based on TAC recommendations, initiation of policy dialogues and workshops to support science and technology governance, establishment of a Technology Transfer Office, finalization of the product catalogue for innovation dissemination,



Glimpses of Official interactions between ED COMSATS, Amb. Dr. Nafees Zakaria and H.E. Mr. Atadjan Movlamov, Dean of Diplomatic Corps, and H.E. Mr. Jemal Beker Abdula

exploration of fellowships and resource-sharing programs to address human capital needs, and strengthening of the R&D Fund while expanding COMSATS' regional reach.

This collaborative engagement highlights COMSATS' pivotal role as a platform for fostering South-South and triangular cooperation in science and technology, and its commitment to building resilient knowledge systems that advance sustainable development across its Member States.

Enhancement of Membership

Enhancement of Membership of COMSATS' Commission

In line with its statutory role and COMSATS' mission, the Secretariat continued its efforts to expand the State membership of COMSATS to promote intra-South dependence and strengthen international collaboration in science and technology. During 2024, under the lead of Executive Director, various means and occasions were used to offer COMSATS State Membership, besides following up on earlier made offers, mostly through diplomatic channels.

In May 2024, COMSATS formally offered State Membership to Turkmenistan in the wake of interest expressed by the Ambassador of Turkmenistan to Pakistan, H.E. Mr. Atadjan Movlamov, during a meeting with the Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria.

The Kenyan High Commissioner to Pakistan, Amb. M. Nyambura Kamau, expressed interest in building formal ties with COMSATS in view of its robust Network of International S&T Centres of Excellence. Amb. Zakaria briefed her about COMSATS, its mandate as an intergovernmental organization, statutory bodies, programs and activities. The Executive Director also briefed her about the prescribed procedure for a country to join COMSATS as its Member State.

Following up on the discussions held at the meeting, a brief on COMSATS along with lists of its Member States and Members of Network of International Centres of Excellence was shared with the High Commission. During March 2024, a delegation from Kenya's IT Department accompanied by an official of the Kenyan High Commission also visited COMSATS Secretariat. Discussions focused on fostering partnerships in cybersecurity and healthcare, with COMSATS' extending an invitation for Kenya to join as a member state to enhance mutual cooperation.

The offer made to Republic of Iraq was also followed up. The Secretariat shared a draft Accession Agreement for Iraq to Join COMSATS, with its Focal Points in Pakistan, the Ministry of Science and Technology, Government of Pakistan, in view of the latter's participation engagement with the officials of Iraqi Government post Inter-Ministerial Meeting on the 9th Session of Iraq-Pakistan Joint Commission.

The Executive Director held meetings with Ambassadors and High Commissioners of other potential Member States as well. These included Ambassador of Azerbaijan, H.E. Mr. Khazar Farhadov, Ambassador of Ethiopia, H.E. Mr. Jemal Beker Abdula, and High Commissioner of Malaysia, H.E. Mr. Mohammad Azhar Mazlan. These interactions were aimed at strengthening ties and encouraging their respective governments to join COMSATS, highlighting the organization's role in advancing scientific cooperation and technological innovation..

Interactions with Host Country, Pakistan

COMSATS 29th Anniversary Celebrated at the Presidency of Host Country, Pakistan

COMSATS was founded in 1994 as an intergovernmental organization of the countries of the South to help pool their intellectual and scientific resources for achieving their developmental needs and national objectives. COMSATS was a culmination of science diplomacy efforts



The (then) President of Pakistan, H.E. Dr. Arif Alvi, and Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, speaking on the occasion of the 29th anniversary ceremony of COMSATS, held at Aiwan-e-Sadr, Islamabad

of the Nobel Laureate and world renowned scientist, Prof. Abdus Salam, whose persistent efforts in 1990s helped his idea of the Commission win Heads-of-State level patronage of the developing countries.



In October 2023, COMSATS turned 29 with the completion of the third decade right around the corner. Cognizant of importance of this juncture, on 16th January 2024, a graceful ceremony was held at the Presidency of COMSATS' host country, Pakistan – Aiwan-e-Sadr, Islamabad – to celebrate the organization's achievements over the years and for setting the stage for its future goals. The ceremony was presided over by the then President of Pakistan, H.E. Dr. Arif Alvi.

The ceremony was attended by Minister for S&T, Government of Khyber Pakhtunkhwa; Pakistan's Foreign Secretary; Ambassadors and High Commissioners of COMSATS Member States and other countries; representatives of international organizations; high ranking civil and military officials; Scientists and Academicians; and Heads of scientific organizations and academic institutions also participated in the event.

H.E. Dr. Alvi warmly felicitated the Heads of the State and Government of COMSATS' Member Countries and all those affiliated with the organization. He underscored the importance of COMSATS and assured the Government of Pakistan's active support.

Alluding to the significance of the technological advancement and innovations in diverse fields and widespread equal availability of knowledge, President Dr. Alvi stressed the need to share the latest scientific breakthroughs, experiences and achievements for the greater benefit of entire humanity. He opined that knowledge should not remain bound in the confounds of the developed countries' elusive repositories. The capping under 'copyrights' regime limits accessibility to useful knowledge that could help humanity to move through the current economic, social and global challenges. He equated such limiting with "vision impairment of the South". He further remarked that right transformation in the world could only take place in the presence of 'ethics or humanity-based order'. The 'rules-based world order' was dominated by material-driven priorities, he opined.

H.E. Dr. Alvi considered genomic-sequencing one of the major breakthroughs in the scientific world that had become increasingly accessible to



Participants of the ceremony standing for the national anthem of Pakistan

people over time due to the exponential pace of scientific developments. The world is heading towards exponential development as the technology will no longer remain static, he added. In the same vein, he highlighted how, very soon, quantum computing would be handling billions of humans' data on their health, besides opening up 'tremendous possibilities in the agriculture sector'.

Lauding COMSATS' role as agency of international cooperation, the President appreciated contributions of the COMSATS in the realms of science and technology among its 27 members. He congratulated Executive Director of COMSATS, Amb. Dr. Mohammad Nafees Zakaria, on the landmark achievements of 29th Anniversary and expansion of Network to Europe with addition of University of Granada, Spain.

Speaking on the occasion, Ambassador Zakaria stated that in today's rapidly evolving world, ST&I stand as the bedrock of progress and the key to unlocking solutions for pressing global challenges. He advocated that adequate and sustainable funding for R&D not only helps in creating novel technologies but also drives a cycle of innovation.

Ambassador Zakaria paid tribute to Prof. Dr. Abdus Salam for his vision and contributions to the world science and technology especially benefitting the South through scientific institution-building, COMSATS being one of these.

He thanked the Chairperson of COMSATS, H.E. Nana Addo Dankwa Akufo-Addo, the (then) President of the Republic of Ghana, who has been facilitating S&T exchange, knowledge networking, capacity-building, and collaborative research among member countries. The Executive Director highlighted a series of new initiatives by COMSATS pertaining to information technology and its applications, artificial intelligence, genomic sequencing, renewable energy, electric vehicles, precision agriculture, industrial biotechnology and climate change. He also highlighted establishment and work of COMSATS Joint Centre for Industrial Biotechnology, and COMSATS Centre for Climate and Sustainability in recent years. He was confident that the leadership of the member states would provide necessary support to further these endeavors.



Prof. Zhaohui receiving the COMSATS Network Membership Certificate on behalf of UGR-Spain

Dr. Zakaria also informed the learned gathering of the notable presence of COMSATS at COP28, UAE, where he had advocated for more just Climate Change mitigation efforts urging the tech-advanced nations to shoulder greater responsibility. He thanked President Alvi and attending Ministers and diplomatic community in Islamabad for showing their support to COMSATS by gracing the ceremony with their presence.

Prof. Dr. Lin Zhaohui, Director, International Center for Climate and Environment Sciences (ICCES), China, was the guest of honor on the occasion. Dr. Zhaohui stated that this milestone in the journey of COMSATS needs to be cherished for the organization's continued commitment to promoting South-South and Triangular Cooperation in the realm of science, technology and innovation. He



Participants of the 29th anniversary ceremony of COMSATS



expressed ICCES' firm commitment to COMSATS.

Taking pride in his Centre being one of the Founding Members of COMSATS Network, he highlighted its efforts towards multilateral research through a dedicated group on Climate Change. He appreciated COMSATS' unique structure for enabling cooperation in S&T, and appreciated its role in advancement and regional cooperation in S&T through its Network of Centres of Excellence. Prof. Lin highlighted the issue of climate change as one of the imminent threats to the planet, and appreciated COMSATS for being at the forefront to promote sustainable solutions and environmental stewardship.

A high-point of the celebration – announcement of induction of University of Granada (UGR), Spain, in COMSATS Network – was celebrated with a ceremonious presentation of Membership Certificate by Dr. Alvi to the University of Granada (UGR), Spain. A seasoned member of COMSATS Coordinating Council that provides patronage to the Network's operations, Dr. Zhaohui received the Certificate on behalf of UGR.

Dr. Alvi and the envoys of Member States of COMSATS made the ceremony more memorable by cutting the anniversary cake.

Delegation of Ministry of National Health Services Regulation and Coordination (NHSRC), Pakistan (May 15, 2024)

COMSATS Telehealth (CTH) has been sharing its expertise and playing a significant consultative role as Pioneer Telehealth Service provider in Pakistan. COMSATS welcomes collaborations and advisory role at local and international level for sharing its expertise in digital health technologies for primary and secondary healthcare and its mainstreaming.

As a result of the renewed efforts of COMSATS' leadership and vision for widespread provision of Telehealth in Pakistan and replication of the Program in Member States, COMSATS Telehealth has attracted a number of Ministers in Pakistan and from foreign countries, diplomats, dignitaries and senior government officials, for discussions in the related areas.

On May 15, 2024, a delegation of Ministry of National Health Services Regulation and Coordination (NHSRC), Pakistan, and representatives from the World Health Organization (WHO), led by Deputy Director-General (MoNHSRC), Dr. Soofia Yunus was received at COMSATS Telehealth housed at CIS Technology Park. The visit was a step towards aligning policy initiative and benefit from tech-based medical services provided by COMSATS to promote Telehealth clinics countrywide.

Exploration of COMSATS Telehealth Infrastructure led to the visitors' understating the program's diverse



Delegation from the Ministry of National Health Services, Regulations and Coordination (NHSRC), Pakistan, meeting with ED COMSATS, Amb. Dr. Nafees Zakaria



ED COMSATS, Amb. Dr. Nafees Zakaria presenting a shield to Member British House of Lords, Baroness Sayeeda Hussain Warsi



Secretary General of the Commonwealth, Rt Hon. Patricia Scotland KC

areas and medical facilities, operational aspects, financial structure, and the setup of Telehealth clinics, highlighting the program's capacity to reach even the remotest areas of Pakistan.

During the meeting with the Executive Director COMSATS, Amb. Dr. Mohammad Nafees Zakaria, the visitors commended COMSATS' efforts towards S&T led development. The Executive Director assured organization's support to Pakistan, which is a founding member of the IGO and hosts its Secretariat in Islamabad.

Other Important Interactions

Member British House of Lords, Visits COMSATS (May 14, 2024)

Baroness Sayeeda Hussain Warsi, British lawyer, politician, and a member of the House of Lords, UK, who served as Co-chairperson of the Conservative Party from 2010 to 2012, visited COMSATS Secretariat to meet the Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, on May 14, 2024.

Amb. Zakaria, who has also served as the High Commissioner for Pakistan to the United Kingdom from 2019 to 2020, shared with Baroness Warsi information about COMSATS and recent initiatives of the organization. These initiatives are in the fields of Artificial Intelligence (AI), Information Technology (IT) and digital technologies, industrial biotechnology, climate change and environment, renewable energy, genomics, electric vehicles, precision agriculture, and micro-chip circuit designing.

Amb. Zakaria informed Baroness Warsi that the Centres of Excellence provide COMSATS the technical grounds for scientific cooperation and collaboration. They were of the view that COMSATS should explore opportunities for cooperation with the U.K. while Baroness Sayeeda Warsi assured Dr. Zakaria of her support to that end.

Baroness Sayeeda Warsi, in her erstwhile capacity as Co-Chair of the Conservatives Party U.K., had played a lead role in the establishment of the Conservative Friends of Pakistan with both countries' then Prime Ministers present on the occasion. Ambassador Zakaria, then as DHM, extended full assistance to Baroness Warsi.

With the cherished memories of friendship and cooperation between the Baroness and Amb. Zakaria, as representatives of their respective countries, the meeting afforded good opportunity to open discussion in new domains.

Secretary General Commonwealth and Minister for Science and Technology, Pakistan Visit COMSATS (July 30, 2024)

The Secretary General of the Commonwealth, Rt Hon. Patricia Scotland







The Secretary General of the Commonwealth, Rt Hon. Patricia Scotland KC; Federal Minister for S&T and Education, H.E. Dr. Khalid Maqbool Siddiqui; and ED COMSATS, Amb. Dr. Mohammad Nafees Zakaria, along with his team, during the meeting

KC, led a seven-member delegation that visited COMSATS Secretariat on July 30, 2024.

Federal Minister for Science and Technology and Federal Education & Professional Training, H.E. Dr. Khalid Maqbool Siddiqui, graced the occasion with his presence. The Commonwealth delegation met and had discussion with the Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria and his team.

The two intergovernmental organizations have nine common member countries, and share the objective of facilitating international cooperation in science and technology for sustainable development. COMSATS is an accredited organization of the Commonwealth and is cooperating in various fields, including digital health, since 2018.

The Minister noted that Pakistan has a youth bulge of 64% of the population, which needs to be converted into an asset through necessary skills enabling them to better contribute to the country's socio-economic development.

The Secretary General Commonwealth stated that the future is technologically driven, and, therefore, important to provide opportunities to the youth for training and education. In this regard, she highlighted the Commonwealth's ongoing endeavors, such as AI Academy, training courses for leaders, Common Space initiative, etc.

The Executive Director recalled COMSATS' working relations and cooperation with the Commonwealth, as well as highlighted the organization's key programs and activities. He underscored COMSATS' commitment to facilitate its member countries in keeping pace with scientific and technological developments. He expressed pleasure that COMSATS Telehealth was given an award in 2021 by the Commonwealth Centre for Digital Health (CWCDH) in telemedicine category.

The two sides held fruitful discussions on cooperation in various fields, including IT and AI, Cyber Security, Cloud Computing, Fintech, Tech-enabled Health Clinics, EV and Climate Change, and expressed a strong desire to work together for the



Group Photo of the participants of the Meeting

benefit of developing countries.

They exchanged information on their ongoing and planned programs and activities. The Secretary General expressed keen interest in digital health and biotechnology related activities of COMSATS.

Ambassadors/Diplomats of Ghana, Jordan, Kazakhstan, Morocco, Nigeria, Palestine, Tunisia and Yemen graced the occasion to greet and meet the Secretary General Commonwealth. The delegation also visited COMSATS Technology Park and witnessed the functioning of COMSATS Telehealth Program.





The Secretary General and Minister MoST also planted trees at the Secretariat to mark the beginning of a strong and enduring relationship.

President-designate COP-29 visits COMSATS

President-designate of COP29, Azerbaijan's Minister of Ecology and Natural Resources, H.E. Mr. Mukhtar Babayev, visited COMSATS on May 10, 2024 along with Coordinator to the Prime Minister on Climate Change & Environmental Protection, H.E. Ms. Romina Khurshid Alam.

The Executive Director COMSATS, Amb. Dr. Nafees Zakaria, warmly welcomed the delegation from Azerbaijan. Ms. Amna Batool, Member of the National Assembly was among the distinguished visitors to COMSATS.

Ambassador Zakaria briefed the delegation on COMSATS and its origin. He paid tribute to Pakistan's distinguished Physicist and Nobel Laureate Prof. Abdus Salam, who founded it in 1994. He highlighted the over-arching objective of the 27 member intergovernmental organization, that is bridging knowledge and technology gap between global south and global north. He emphasized the pivotal role of COMSATS' Network of 25 Centres of Excellence in fostering science and technology collaboration among member countries.

In the context of cooperation between COMSATS and Azerbaijan Ambassador Zakaria mentioned about earlier visit of Azerbaijan delegation and subsequent training in AI and Software Quality Assurance.

The Executive Director introduced COMSATS Centre for Climate &

Sustainability (CCCS) and offered to provide collaborative support to the COP29 President-designate in organizing of the event hosted by Azerbaijan.

The Minister, H.E. Mr. Mukhtar Babayev expressed a strong desire for collaborative efforts within the framework of COP29. He envisaged Azerbaijan serving as a pivotal link in the continuum of decision-making and implementation, linking the outcome of COP28 at the UAE and COP30 to be held in Brazil this year. H.E. Mr. Babayev further stressed the imperative for developing countries to harness their collective strength to effectively address global challenges like climate change.

The Coordinator to the Prime Minister, H.E. Ms. Romina, appreciated the role being played by COMSATS in the efforts towards Climate Change challenge and effectiveness of the 27 member platform on the whole in the fields Science and technology.

The visit of the Azerbaijani delegation offered a good opportunity for discussions on enhancing cooperation between COMSATS and Azerbaijan in various areas of mutual interest, with a focus on leveraging science, technology, and innovation for sustainable development, in general, and Climate Change, in particular.



Coordinator to the Prime Minister on Climate Change & Environmental Protection, H.E. Ms. Romina Khurshid Alam, and ED COMSATS, Amb. Dr. M. Nafees Zakaria, in a meeting during the visit of the President-designate of COP29 and Azerbaijan's Minister of Ecology and Natural Resources, H.E. Mr. Mukhtar Babayev, at COMSATS

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STRENGTHENING SOUTH-SOUTH AND TRIANGULAR COOPERATION

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STRENGTHENING SOUTH-SOUTH AND TRIANGULAR COOPERATION

One of the main functions of COMSATS is to support major initiatives designed to promote indigenous S&T capacity through synergies among relevant Governments in the North and the South. Dignitaries, officials and delegations from a number of countries are engaged on regular basis to establish and promote linkages to help strengthen South-South and Triangular cooperation in a number of fields, including education, training and research, climate change, SDGs, and emerging technologies.



The Syrian delegation, led by the Deputy Minister of Education and Educational Affairs, H.E. Dr. Rami Waheed Al-Dhulli, with Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, and his team at COMSATS Secretariat, Islamabad

Meetings with Diplomats/ Delegates/Officials of Member States

Director ICCES, China (January 15, 2024)

Prof. Lin Zhaohui, Director of COMSATS Centre of Excellence in China, International Centre for Climate and Environmental Sciences (ICCES), Beijing, visited COMSATS Secretariat on January 15, 2024. A veteran scientist, Dr. Zhaohui is a senior member of COMSATS Coordinating Council.

Dr. Zhaohui, who had been in Pakistan to participate in COMSATS' 29th Anniversary Celebration, was warmly received by the Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria. Discussions between the two officials revolved around their organizations' enduring partnership and exploring avenues for joint initiatives in climate change and environment.



Director ICCES, China Prof. Lin Zhaohui, and Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria

Iftar Reception hosted by Executive Director COMSATS (March 26, 2024)

The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees





Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, speaking at the Iftar Reception

Zakaria, hosted Iftar Reception, on March 26, 2024, in Islamabad.

Pakistan's Minister of State (IT & Telecommunication), H. E. Ms. Shaza Fatima Khawaja, was the Chief Guest on the occasion. The Ambassadors/diplomats of various COMSATS' member states and friendly countries attended the reception. Senior Government officials – both civil and military, Heads of international organizations, academic institutions, S&T organizations, public departments and private sector, got together to celebrate the Holy Month of Ramadan.

The event had eminent presence of H.E. Dr. Reza Amiri Moghaddam, Ambassador of Islamic Republic of Iran; H.E. Dr. Maen Khreasat, Ambassador of Hashemite Kingdom of Jordan; H.E. Mr. Yerzhan Kistafin, Ambassador of the Republic of Kazakhstan; H.E. Mr. Mohamed Karmoune, Ambassador of the Kingdom of Morocco; H.E. Mr. Ahmad Rabei, Ambassador of the States of Palestine; H.E. Dr. Ramez Alraee, Ambassador of the Syrian Arab Republic; H.E. Mr. Khazar Farhadov, Ambassador of Azerbaijan; H.E. Mr. Jemal Beker Abdula; Ambassador Extraordinary and Plenipotentiary of the Federal Democratic Republic of Ethiopia; H.E. Ms. Nyambura Kamau, High Commissioner of Kenya; H.E. Mr. Totuiaev Ulanbek Asankulovich, Ambassador Extraordinary and Plenipotentiary of Kyrgyzstan; H.E. Mr. Mohammad Azhar Mazlan, High Commissioner of Malaysia; and Dr. Shahid Rashid Butt, Honorary Consul General of Republic of Ghana.

President ECO Science Foundation (ECO-SF), Prof. Seyed Komail Tayebi, along with his senior officials, President NDU, Gen. Asif Ghafoor; Head of Welthunger Hilfe (WHH), Ms. Aisha Jamshed; Chairman Intellectual Property Organisation of Pakistan (IPO-Pakistan); Ambassador Farukh Amil, Senior officials of Ministry of Science and Technology, Ministry of Foreign Affairs, Chief Commissioner and Commissioner Regional Tax Office (RTO), Islamabad; ex-Chairman Federal Public Service Commission (FPSC), Capt. (R) Mr. Zahid Saeed; CEO NITB, Dr. Baber Majid Bhatti; CEO AGECO (Pvt) Ltd, Mr. Aslam Azad; CEO EZShifa Pvt. Ltd.; Mr. Adnan Siddiqui; CEO Ignite- National Technology Fund, Mr. Asim Shahryar; DIG Islamabad Police; Deputy Commissioner Islamabad; Project Director NIC, Mr. Parvez Abbasi; and other distinguished guests attended the august ceremony.

Speaking on the occasion, Dr. Zakaria welcomed and thanked the guests for their participation in the reception and hoped for peace and harmony among nations across the globe. Ambassador Zakaria highlighted the importance of international cooperation in science and technology for providing tech-based solutions for various global challenges.

Spirit of Ramadan unity and exchange of fraternal sentiments were the essence of the event. Diplomats and senior officials availed the opportunity to discuss with the IT Minister the matters of common interest pertaining to Science and Technology (S&T).





Deputy Minister of Education and Educational Affairs, H.E. Dr. Rami Waheed Al-Dhulli in a meeting with Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria

Deputy Minister of Education and Educational Affairs (May 7, 2024)

A six-member Syrian delegation, led by the Deputy Minister of Education and Educational Affairs, H.E. Dr. Rami Waheed Al-Dhulli, visited COMSATS Secretariat on May 07, 2024. Comprising senior officials of Syrian Ministry of Higher Education and Scientific Research, as well as Ministry of Education, the delegation held meeting with the Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria. The Ambassador of Syria to Pakistan, H.E. Mr. Ramez Alraee, and officials from relevant Pakistani Ministries and Departments, accompanied the delegation.

During the meeting, the two sides held substantive discussion on cooperation towards developing and equipping an IT Centre in Damascus, the seeds of which were sown some years ago. The development of the Centre did not materialize due to the external factors that created unfavorable situation in that region. The Syrian government is now pursuing the operationalization of the IT Centre in collaboration with COMSATS.

Ambassador Zakaria considered the IT Centre significant for imparting the educated and employable youth of Syria with the necessary skills to contribute to their country's socio-economic development. In this regard, he assured COMSATS' cooperation and support to the Syrian endeavor. They discussed the educational and training programs for skillsets development for the Syrian youth.

The Executive Director underscored COMSATS' commitment to facilitate the exchange of knowledge and expertise among its Member States. The Syrian Deputy Minister thanked the Government of Pakistan, its people, and COMSATS for the valuable support. The Deputy Minister expressed gratitude to the Ministry of Federal Education and Professional Training, Government of Pakistan, for warm hospitality and facilitation.



Deputy Minister of Education and Educational Affairs, H.E. Dr. Rami Waheed Al-Dhulli, and ED COMSATS, Amb. Dr. Mohammad Nafees Zakaria, along with his team, during the meeting



Delegation from Kenya's IT Department in a group photo with ED COMSATS, Ambassador Dr. M. Nafees Zakaria at his Office



Meetings with Diplomats of Potential Member States

Delegation from Kenya's IT Department (March 5, 2024)

A delegation comprising officials from Kenya's IT department, Ms. Fridah M. Mwangangi and Mr. Osbert K. Kororia, accompanied by Mr. Masoud J. Rasam, Counsellor of the Kenyan High Commission, paid a visit to the COMSATS Telehealth Resource Centre on March 5, 2024. Mr. Irfan Hayee, Additional Director(Programs) at COMSATS Secretariat, facilitated the delegation, while Dr. Azeema Fareed, Additional Director of Health at the Resource Centre, coordinated and conducted the visit.

During the visit, the delegation received an overview of the Telehealth service model operating in remote areas of Balochistan. They expressed interest in the technological aspects of the Telehealth system, particularly its security features for data protection. The delegation interacted with the doctors working at the Resource Centre, inquiring about patient load, satisfaction levels, and the benefits of the service. They also showed interest in the patient software used for data exchange.

Ms. Fridah elaborated on Kenya's health system, highlighting the predominant role of nurses in basic health facilities. The hosts underscored role of paramedics in the program, the benefits of Telehealth and insights into daily patient turnout.

Following the visit to the Telehealth Resource Centre, the delegation met with the Executive Director of COMSATS to explore avenues of collaboration. Discussions focused on potential support from COMSATS in cybersecurity and further cooperation in the field of Telehealth to benefit Kenya.

This visit marks a significant step towards fostering partnerships between COMSATS and Kenya in advancing healthcare and cybersecurity initiatives.

Ambassador of Turkmenistan to Pakistan (May 31, 2024)

Turkmen Ambassador to Pakistan, His Excellency Mr. Atadjan Movlamov, visited COMSATS Secretariat and held a meeting



Ambassador of Turkmenistan to Pakistan, H.E. Mr. Atadjan Movlamov with ED COMSATS at the latter's office

with the Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria on May 31, 2024.

The two focused on fostering mutual cooperation for Research and Development in various cutting-edge technologies. During the meeting, both dignitaries exchanged views on leveraging emerging technologies for mutual benefit. Key topics of discussion included: Artificial Intelligence (AI); Information Technology (IT) and IT-enabled Services; and Cyber Security.

Amb. Zakaria emphasized COMSATS' commitment to advancing science, technology, and innovation through South-South and Triangular Cooperation. Expressing his enthusiasm for strengthening ties with Turkmenistan, Amb. Zakaria formally invited Turkmenistan to become a Member State of COMSATS. He highlighted the potential for Turkmenistan to benefit from COMSATS' extensive Network and resources, aligned with COMSATS' mandate.

The visit resulted in exploring mutual interest in exploring academic and research partnerships, aiming to bolster economic growth and development in line with global advancements in technology.

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COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

Over the years, COMSATS has expanded its cohort of national and international partners to foster broader and more effective collaborations in Science and Technology and launch new programmes and activities with its Centres of Excellence for sustainable socio-economic development of the Member States. Still growing, these partnerships aim to complement the programmes of COMSATS focusing on capacity-building of S&T community in developing countries.



Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, and Chairman NDMA, Lt. Gen. Inam Haider Malik, along with their teams during a visit to the NEOC at NDMA

Innovation and Digital Development Agency (IDDA), Azerbaijan

COMSATS Co-organizes Bootcamps for AI and SQA Trainings in Baku, Azerbaijan

COMSATS, in collaboration with the Innovation and Digital Development Agency (IDDA), Ministry of Digital Development and Transport of the Government of Azerbaijan, successfully conducted trainings for Artificial Intelligence (AI) and Software Quality Assurance (SQA) in Baku, Azerbaijan, on 12 January 2024.



A Memorandum of Understanding (MoU) had been signed in July 2023 between COMSATS and IDDA for cooperation in the field of Information and Communication Technologies, which facilitated the execution of these technology trainings. This is among the new initiatives taken by Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS.

The two bootcamps imparted the participants with necessary skills and tools for effective utilization of information technology in developing tech-based solutions. It is a significant step for



COMSATS in achieving its mission of fostering international collaboration in the realm of science, technology, and innovation.

Pakistan Britain Business Council (PBBC)

COMSATS and PBBC collaborate to establish Pakistan Pavilion at BETT UK

COMSATS joined hands with the Pakistan Britain Business Council (PBBC) for establishing the Pakistan Pavilion at BETT UK. Being a global meeting place for education technology (EdTech) community, BETT UK was held on 24-26 January 2024, in London, UK. The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, is the Honorary Chief of Advisory Board of PBBC.

COMSATS raised awareness regarding the significance, benefits of participation, and various unique features of BETT UK among the relevant organizations in its Member States, Centres of Excellence, and partner organizations. In this regard, COMSATS facilitated the participation of its technology partner company, SeQuenX, at the event. SeQuenX provides software development and consulting services, and has a global presence with offices in Netherlands, the USA and Pakistan. A three-member team of SeQuenX comprising its Managing Director, Mr. Shurjeel Tousif; Chief Technology Officer, Mr. Zier den Heijer; and EdTech Consultant, Mr. Evans Owusu, exhibited the company's EdTech solutions at the Pakistan Pavilion, which generated considerable interest among the visitors.

Iranian Research Organization for Science and Technology (IROST), Iran

IROST organized Khwarizmi Awards Ceremony

The Iranian Research Organization for Science and Technology (IROST), in collaboration with COMSATS and other partner organizations, successfully organized the 37th Khwarizmi International Award (KIA) and 25th Khwarizmi Youth Award (KYA) in Tehran, honouring young talents and distinguished scientists for their remarkable breakthroughs in the arena of ST&I on February 27, 2024.

COMSATS awarded Certificates to the 2nd and 3rd Laureates of 25th KYA, as recommended by the grand jury of the Khwarizmi Awards. The Executive Director COMSATS also shared his message on the occasion, which was published in KIA Bulletin.
The Khwarizmi International Award (KIA) and Khwarizmi Youth Award (KYA) are named after Muhammad ibn Musa al-Khwarizmi, the renowned Iranian mathematician and astronomer. IROST, an esteemed Centre of Excellence of COMSATS in Iran, organizes the KIA and KYA every year to honour outstanding scientists and researchers for their significant contributions towards science, technology and innovation. Considered as





Amb. Dr. M. Nafees Zakaria, ED COMSATS, and Dr. Adnan Siddiquie, Chief Operating Officer EZShifa, signed COMSATS-EZShifa MoU on March 11, 2024

the most prestigious scientific award in the country, KIA is being presented annually since 1987 by the honourable President of the Islamic Republic of Iran to those scientists, researchers and innovators who bring about enormous benefits to the society in the form of S&T solutions to the various global challenges. Moreover, since 1999, the Khwarizmi Youth Award is presented to appreciate and recognize talent of the promising young Iranian scientists in order to embolden them to take bigger steps in their research career. The awards comprise a trophy, a certificate, and cash prizes. Since the year 2000, COMSATS has been supporting the Khwarizmi Awards.

EZShifa, Pakistan

COMSATS and EZShifa to collaborate for Tech Enabled Primary Healthcare in Remote Areas

COMSATS and EZShifa (Pvt) Ltd, formalized a Memorandum of Understanding on March 11, 2024 for the provision and advancement of Telehealth and telemedicine services, and leveraging technology and operations, with a common vision of making quality healthcare accessible and affordable for all.

The agreement was signed by Ambassador Dr. M. Nafees Zakaria, Executive Director COMSATS, and Dr. Adnan Siddiquie, Chief Operating Officer EZShifa for their respective institutions. The agreement will strengthen COMSATS' Telehealth program for its Member States, enriching it with technological options for telemedical consultations. Moreover, the MoU provides grounds for collaboration in developing technology products, particularly biomedical devices, as well as academic/training activities.

AGECO, Pakistan

COMSATS-AGECO Partnership Leads to Landmark Achievement EV

COMSATS and AGECO JV developed 100% indigenous kits converting ICE vehicles to EV by retrofitting. An EV bike,



made by COMSATS' partner AGECO's Technologist & CEO, M. Aslam Azad, handed to Dr. Fareed Sial on behalf of Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria. This EV a result of the collaboration between COMSATS and AGECO Pvt. Ltd., (Also known as Economia) that was formally initiated on August 25, 2023 through an MoU at strengthening the Electric Vehicle (EV) industry in Pakistan and other COMSATS Member States.

The prototype of the said bike was successfully tested for its fuel economy and load bearing on inclined services and platforms. It has been shown to have the following benefits:

Running cost Rs. 0.50 to 1.00 per km depending load & charging source;
Environment friendly;
Reduced import bill of oil;

> "Now a Days I'm using Electronic Bike and used to go daily to work place, it's wonder for me only I Pay RS.20 cost daily, as monthly Cost is Just RS.600 only", says Dr. Sial, "(before this) I was using petrol bike and it used to incur heavy cost, almost 20k to 25k per month. I really appreciate the indigenous innovation of "ECONOMIA" and (my) Special Thanks to ED COMSATS Ambassador Dr. Nafees Zakaria".



LoA Signing Ceremony between COMSATS and NIDM held at COMSATS Secretariat, Islamabad

Indigenous production will open new avenues for development in EV field. Dr. Sial who has since brought the bike for routine use concurs the fuel economy observation.

National Institute of Disaster Management, Pakistan (NIDM)

COMSATS Signs Letter of Agreement with NIDM-Pakistan

In a collaborative endeavor aimed at enhancing climate resilience and fostering sustainable solutions for disaster management using innovative technology, COMSATS and the National Institute of Disaster Management (NIDM), Pakistan, formalized the signing of a Letter of Agreement (LOA) on April 4, 2024, in Islamabad.

The Letter of Agreement (LOA) delineates an initiative focused on cooperation, coordination, and resource mobilization across all facets of disaster management, with a specific emphasis on mitigating the vulnerability of communities affected by climate change and natural disasters. By leveraging the collective expertise and resources of both organizations, the partnership seeks to integrate climate considerations into their respective activities and operations, offering tools, assessment methodologies, and information resources to support decision-makers. This includes joint research, knowledge sharing, technology transfer, capacity building initiatives, and advocacy efforts across various sectors such as ecosystem management, health, agriculture, and water resources to enhance climate resilience.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, and M. Tanveer Paracha, Chief Coordinator of NIDM, signed the agreement on behalf of their respective organizations. The collaboration will focus on the exchange of knowledge and data to strengthen climate resilience, alongside advocacy and policy development to raise awareness and shape effective frameworks for climate adaptation and disaster management. This partnership underscores a shared commitment to building a more resilient future for communities in Pakistan and beyond.



Group Photo after signing the LoA between COMSATS and NIDM



Prof. Raheel Qamar, Head of the Science and Technology (S&T) Sector at ICESCO receiving shield from Ambassador Dr. Nafees Zakaria, Executive Director COMSATS

COMSATS is known for its capacity building activities, collaborative research and development projects, and technological solutions aimed at addressing various challenges and delivering public services. It explores ventures in AI applications, precision agriculture, food security, telehealth, drone technology, electric vehicles, among others. Additionally, COMSATS holds observer status with UNFCCC and has an exclusive Directorate, COMSATS Centre for Climate and Sustainability, with membership of 25 Climate and Environmental Institutions. Meanwhile, NIDM-Pakistan operates as a research-based think tank under the National Disaster Management Authority (NDMA). It provides policy advice and facilitates capacity building services, including research, training, system development, and expertise promotion for effective disaster preparedness and mitigation.

The signing ceremony was graced by distinguished guests and significant stakeholders, comprising policymakers, climate and finance professionals, and practitioners representing various governmental bodies such as the Ministry of Science and Technology (MoST) Pakistan, the Ministry of Climate Change and Environmental Coordination (MoCC&EC) Pakistan, SDG Unit, Planning Commission, the ECO Science Foundation (ECOSF), and the Climate Resource Coordination Centre (CRCC).

Activities held in collaboration with NDMA and the National Institute of Disaster Management (NIDM), during 2024, are detailed in a later section of this Annual Report – COP29.

Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco

Strengthening Collaboration between COMSATS and ICESCO

Executive Director COMSATS, Ambassador Dr. Nafees Zakaria, and Head of the Science and Technology (S&T) Sector at ICESCO, Prof. Raheel Qamar, convened a productive meeting on May 6, 2024, at COMSATS Secretariat. The meeting served as a platform to reinforce the existing collaboration between the two esteemed organizations.

During the meeting, both parties expressed mutual appreciation for the active collaboration between COMSATS and ICESCO. Prof. Raheel Qamar highlighted ICESCO's recent achievements and initiatives aimed at advancing socio-economic development in its member states. Noteworthy initiatives include the ICESCO accelerator program for young entrepreneurs in the technology sector, efforts to foster entrepreneurship in the space sector, and support for small-scale farmers through smart agriculture initiatives.

Additionally, ICESCO organizes specialized ministerial conferences and high-level sectoral gatherings to address mutual interests in education, higher education, scientific research, and environmental sustainability. These conferences serve as platforms for ministers and decision-makers from member states to explore key questions and collaborate on sustainable solutions.

On the COMSATS side, Ambassador Dr. Nafees Zakaria briefed Prof. Raheel Qamar about recent initiatives, particularly the development of 100% indigenous kits for converting internal combustion engine (ICE) vehicles to electric vehicles (EV) through retrofitting. This initiative aligns with COMSATS' commitment to sustainable solutions to address global challenges.

Both organizations affirmed their commitment to continued collaboration and agreed to share their work plans and action plans for 2024-2025. Through strengthened collaboration, COMSATS and ICESCO aim to contribute significantly to socio-economic development and technological innovation in their member states.





Amb. Dr. M. Nafees Zakaria, ED COMSATS, and Dr. Ashraf Masood, Chief Executive Officer, KTS, signed MoU on May 16, 2024

This meeting underscores the shared commitment of COMSATS and ICESCO to leverage science, technology, and innovation for the benefit of their member states and the broader Islamic world. By pooling their resources and expertise, both organizations are poised to make meaningful contributions to sustainable development and prosperity in the region.

ICESCO was also a major partner of COMSATS for COP29. COMSATS organized several high-impact events at ICESCO's Pavilion during the UN Climate Conference. A significant milestone in the relationship between the two organizations was the successful co-organization of an official UNFCCC sideline event at the UNFCCC Pavilion—an achievement secured through a competitive selection process. This accomplishment marked a high point in the growing collaboration between COMSATS and ICESCO on global climate action.

Khas Technology Solutions (KTS), Pakistan

COMSATS and KTS to Collaborate for Developing High Skilled HRD and Tech Enabled Solutions

COMSATS and Khas Technology Solutions (KTS), formalized a Memorandum of Understanding on May 16, 2024. The agreement paves way for collaboration in developing IT enabled solutions and conducting online professional training programs focused at high skilled HRD in various fields including Information and Communication Technology (ICT), DevSecOps, Information and Cyber Security (I&CS), Management, Business, Health, Cloud Computing, Medicine and related technologies using their indigenously developed 'iqrasity' Learning Management System (LMS).

KTS is a technology company specializing in ICT hardware and software development for web and mobile platforms, Cyber Security, Cloud Computing, DevSecOps services and Enterprise software platforms offers comprehensive IT solutions worldwide. The technological advantage of COMSATS stems inter alia, from COMSATS Internet Services (CIS) and COMSATS Software Solution (CSS)

The agreement was signed by Ambassador Dr. M. Nafees Zakaria, Executive Director COMSATS, and Dr. Ashraf Masood, Chief Executive Officer, KTS, for their respective institutions. The agreement aims to enhance capacity of CSS as well as to strengthen COMSATS technical resource base to support its technical programs for COMSATS Member States and Network of S&T Centres of Excellence.

The agreement allows utilizing KTS' versatile LMS branded as 'iqrasity' for professional trainings across COMSATS



MoU Signing Ceremony between COMSATS and Khas Technology Solutions held at COMSATS Secretariat, Islamabad

Member states. The MoU establishes a framework for collaborative efforts in delivering solutions and services to pertinent organizations in Pakistan and other COMSATS Member States.

Living Indus Initiative, Pakistan

Collaboration with Living Indus: Pakistan's Living Indus Initiative and COMSATS Forge Partnership for Climate Action

In 2024, COMSATS deepened its collaboration with the Living Indus Initiative—a flagship programme of the United Nations Decade on Ecosystem Restoration—launched jointly by Pakistan's Ministry of Climate Change and Environmental Coordination (MoCC&EC) and the United Nations. This partnership aims to address pressing climate challenges, with a particular focus on water, agriculture, biodiversity, and environmental sustainability.

On June 12, 2024, a delegation from the Living Indus Initiative, led by renowned environmentalist and Senior Advisor at the UN Resident Coordinator Office, Ms. Aban Marker Kabraji, visited the COMSATS Secretariat to meet with Executive Director, Ambassador Dr. Mohammad Nafees Zakaria. The discussions centered on combining the resources and expertise of both institutions to co-develop technological and nature-based solutions for ecological restoration and climate resilience.

The Living Indus Initiative is committed to reviving the biodiversity of the Indus Basin through projects spanning agriculture, groundwater, finance, forests, governance, pollution control, sustainable urbanization, and livelihoods. COMSATS pledged support to the initiative through its Centre for Climate and Sustainability (CCCS), COMSATS Internet Services (CIS), and its Network of 25 International S&T Centres of Excellence. Potential contributions include collaboration on projects such as the Digital Knowledge Sharing Platform, glacier lake outburst flood (GLOF) response, resilient agriculture, clean energy, biodiversity protection, plastic waste reduction, and wastewater management.



Delegation from the Living Indus Initiative, led by Senior Advisor at the UN Resident Coordinator Office, Ms. Aban Marker Kabraji, met with Amb. Nafees Zakaria

To formally initiate the collaboration, both parties agreed to explore joint programming, share expertise, and develop new tools and mechanisms that enhance socio-ecological resilience and promote innovative climate solutions. The meeting laid the foundation for a long-term formal agreement and action plan, with a commitment to advancing shared goals.

This growing partnership was further strengthened during a follow-up visit by Ms. Kabraji to COMSATS Secretariat on September 26, 2024, where discussions focused on joint representation at the 29th Conference of Parties (COP29) to the UNFCCC, to be held in Baku, Azerbaijan. Senior officials from CCCS and Living Indus deliberated potential synergies, including Ms. Kabraji's participation as a resource person at COMSATS' sideline event during COP29.

COMSATS, in collaboration with the Islamic World Educational, Scientific, and Cultural Organization (ICESCO) and the International Organization for Food Security (IOFS), secured a panel discussion slot at COP29 titled "Fostering Water Security & Peace: Innovation, Clean Tech, & Earth Observations in the Islamic World." During this event, Ms. Kabraji will share her insights on environmental protection and restoration efforts, focusing on water security initiatives led by Living Indus across Pakistan. She will also address the key challenges related to water security in the country. Ambassador Dr. Zakaria will contribute to the discussion by highlighting shared challenges of water security faced by COMSATS member states and the critical role of intergovernmental organizations in addressing these issues.

The meeting further explored other pressing areas of climate action and environmental protection, including permaculture, precision agriculture, integrated solid waste management, and electric vehicles (EVs). A particular focus was given to the issue of integrated solid waste management, with Dr. Zakaria emphasizing the importance of addressing implementation gaps. While effective solutions exist, the primary challenge lies in their execution in developing countries. Representatives from Living Indus briefed attendees on their recent initiative on plastic waste management, which involved small and medium enterprises and included a feasibility study.

Both COMSATS and Living Indus reaffirmed their commitment to organizing impactful high-level forums and dialogues, engaging the international community and experts in these areas to



foster partnerships for effective solutions. The meeting concluded with a strong commitment to joint representation at COP29 in Baku, where both organizations pledged to share expertise and collaborate on future initiatives in areas of mutual interest for a sustainable future.

Economic Cooperation Organization Science Foundation (ECOSF), Pakistan

COMSATS and ECOSF Sign MoU to Address Climate Change and STI Collaboration

COMSATS has signed a Memorandum of Understanding (MoU) with the Economic Cooperation Organization Science Foundation (ECOSF) to cooperate and collaborate for addressing significant challenges faced by their respective member states leveraging each other's expertise in Science, Technology, and Innovation (ST&I).

Climate Change, which poses a serious global threat to sustainable socio-economic growth, the agreement aims to mobilize academia, S&T, and R&D institutes to promote innovation, capacity building, institutional strengthening, sharing knowledge and expertise.

Signed at the COMSATS Secretariat on 2nd July 2024, the MoU also facilitates the exchange of, technological know-how, data, and good practices to strengthen the Sustainable Development Agenda. The partnership will build on the ongoing activities and commitment to R&D and innovation of both COMSATS and ECOSF. It will leverage their joint expertise to address emerging research questions that underscore practical challenges in designing, adopting, and governing sustainable systems. Both organizations will support each other in ST&I-based joint policy research and development for their respective member countries. Alongside officials from COMSATS and ECOSF, the ceremony was attended by representatives from the Ministry of Science and Technology (MoST), COMSATS' partner organizations such as the National Institute of Disaster Management (NIDM) And the Climate Resourcing Coordination Centre (CRCC), as well as representatives from the diplomatic missions of Kazakhstan, Iran, Turkmenistan, and Syria in Pakistan.

Speaking at the event, Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, remarked, "By combining our research strengths and technological expertise, both organizations will be able to have a stronger grip on the development in S&T, an imperative for enabling society to effectively tackle significant challenges with self-reliance."



MoU Signing Ceremony between COMSATS and ECOSF held at COMSATS Secretariat, Islamabad



MoU Signing Ceremony between COMSATS and ECOSF

President of ECOSF, Prof. Seyed Komail Tayebi, expressed his gratitude to COMSATS for this partnership, stating, "COMSATS has consistently demonstrated a strong commitment to supporting and enhancing the national capacities of developing countries in ST&I. Their dedication to promoting South-South cooperation is admirable and aligns perfectly with our goal of fostering economic and social development through regional and sub-regional collaboration."

National Disaster Management Authority (NDMA), Pakistan

COMSATS Officials Visit NEOC, NDMA

A two-member delegation from COMSATS, led by Executive Director Ambassador Dr. Mohammad Nafees Zakaria and Additional Director (Int. Orgs.) and Head of CCCS, Dr. Mehwish Qayyum Durrani, visited the National Emergencies Operation Center (NEOC) at the National Disaster Management Authority (NDMA) Islamabad, on July 22, 2024. The visit, conducted at the invitation of Chairman NDMA, Lt. Gen. Inam Haider Malik, for the demonstration of the state-of-the-art NEOC, the facility established by NDMA with a strategic vision to transition from reactive to proactive disaster management.

During this visit, Dr. Zakaria expressed keen interest in the Center's operations, which focus on innovative preparedness for climate-induced disasters in Pakistan. The delegation was introduced to the latest tools and technologies at NEOC, including real-time satellite feeds and the use of GIS, remote sensing, climatology, meteorology, seismology, hydrology, and data sciences. These systems enable NEOC to monitor and analyze hazards globally and locally, and anticipate disasters up to three months in advance – a crucial capability for a climate-vulnerable country like Pakistan.

Dr. Zakaria appreciated the center's vision, concept, and operational framework. The visit was based on COMSATS existing collaboration with the National Institute of Disaster Management (NIDM) and aimed to foster this prevailing association. In April 2024, both organizations signed a Letter of Agreement to cooperate on areas such as climate resilience, adaptation, disaster management, ecosystem protection, health, agriculture, and water resources.

During the visit, COMSATS and NDMA also agreed to collaborate for joint representation at the UNFCCC Conference of Parties (COP29) in Baku, Azerbaijan. Their partnership will focus on Research & Development (R&D) and Science, Technology, and Innovation (STI) based approach to tackle challenges related to food security, water scarcity, droughts, displacements, health, and other climate-related crises, contributing to a safer and sustainable future.



ED COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, and A.D (Int. Orgs.) and Head of CCCS, Dr. Mehwish Qayyum Durani, during a visit to NEOC, at NDMA Islamabad



Amb. Dr. Zakaria with President of the Islamic World Academy of Sciences (IAS), Prof. Adnan Badran, during visit to Islamabad

Islamic World Academy of Sciences (IAS), Jordan

Cooperation Avenues Explored with President of IAS

The Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, had a meeting with the President of the Islamic World Academy of Sciences (IAS), Prof. Adnan Badran, who was formerly the Prime Minister of Jordan on July 23, 2024. The meeting was also attended by the Secretary General, Arab Academy of Sciences, Prof. Dr. Elias Baydoun besides officials of COMSATS.

Held in Islamabad, the two officials welcomed the idea of signing cooperation agreement to strengthen scientific ties between the two institutions.

Amb. Zakaria introduced Prof. Badran to COMSATS as an intergovernmental organization of 27 developing countries with a Network of 25 International S&T Centres of Excellence across the globe working for scientific and technical cooperation for sustainable development in the South, through South-South and North-South Cooperation mechanisms.

He highlighted the importance of Jordan's role in such pursuits by informing Prof. Badran of the long-haul membership and participation of Jordan's Royal Scientific Society (RSS) in COMSATS' programmes and activities.

Both sides agreed that the expertise and resources should be pooled to pursue the scientific development taking place rapidly. Scientific collaboration and R&D were seen as the key. Both recognized the need for greater intra-south cooperation and interdependence and undertook to make joint efforts to that end.

The idea of COMSATS working with Arab Academy of Sciences (AAS) was welcomed by Prof. Badran, who also extended invitation to the Executive Director COMSATS to participate at the upcoming IAS Conferences to be held in Morocco and Uzbekistan.

Institute of Strategic Studies Islamabad (ISSI), Pakistan

COMSATS and ISSI agree to collaborate for Science Advocacy and Regional Development

COMSATS and the Institute of Strategic Studies Islamabad (ISSI) signed an MoU for complementing each other for Science Advocacy and Regional Development. It was signed by Executive Director



MoU between COMSATS and ISSI, being signed by Amb. Dr. Mohammad Nafees Zakaria (L) and Ambassador Sohail Mahmood (R) on October 25, 2024 at COMSATS Secretariat

COMSATS, Ambassador Dr. M. Nafees Zakaria, and Director General ISSI, Ambassador Sohail Mahmood, on October 25, 2024 at COMSATS Secretariat.

The MoU will pave the way for collaboration for activities such as scientific research, studies and publications, professional exchange and capacity building, sharing of knowledge and experiences, science diplomacy, and regional & international cooperation.

The signing ceremony was witnessed by Ambassadors and diplomats, Heads/ representatives of COMSATS' partner organizations, as well as senior officers of COMSATS and ISSI.

Amb. Sohail Mahmood deliberated on ISSI's commitment to expanding partnerships and outreach to niche specialized institutions. He considered COMSATS as one such organization focused at S&T for development. Amb. Mahmood highlighted ISSI's vision of next generation programs that concentrate on youth-inclusive dialogue and research. He noted that we need to pay critical attention to topics such as "Global South" and Middle Powers — the key players in both geopolitical and geo-economic landscapes.

In his remarks, Amb. Zakaria expressed unflinching commitment of COMSATS to pass on the benefits of contemporary technologies to its Member States, and noted that COMSATS aspires to benefit from the strengths of ISSI with an aim to promoting intra-South reliance and cooperation. He highlighted some of the recent initiatives of COMSATS in the emerging fields of science and technology. He considered the MoU signing as beginning of mutually beneficial collaboration between COMSATS and ISSI.

The collaboration reflects the shared commitment of COMSATS and ISSI to harness latest technologies and innovation for sustainable development on a global scale.



International participation of ANSO-BIDI School including those from COMSATS Member States

Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO), China

ED COMSATS Participates in ANSO Governing Board meeting

The 8th Governing Board meeting of the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) was held in China, which was organized by ANSO Secretariat. The Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, and other 8 members of the Governing Board participated on 3rd June 2024.

ANSO is an international scientific organization, dedicated to China's Belt and Road Initiative (BRI) and achievement of the UN SDGs. COMSATS, a 27-member intergovernmental organization, endeavoring to promote South-South cooperation in science, technology and innovation, joined ANSO as a member in 2019. COMSATS was subsequently elected as a member of ANSO Governing Board in November 2023.

The Governing Board reviewed ANSO Progress Report and Plan for 2024, Regulations on the Administration of ANSO Secretariat, and Proposal for holding the next Governing Board Meeting in Thailand. Moreover, appointment of Prof. Weidong Liu, Director General of International Cooperation Bureau of Chinese Academy of Sciences, as the new Executive Director of ANSO Secretariat, was announced during the meeting, who was warmly welcomed by Governing Board members.

Participating online in the meeting, Ambassador Zakaria congratulated the new ANSO Secretariat Executive Director, and underlined that commonality of objectives, common 24 member countries and 3 Centres of Excellence, provide fertile ground to complement each other. To that end, he urged focus on emerging technologies for employability of youth and facilitating economic growth. Ambassador Zakaria proposed cooperation between COMSATS and ANSO for organizing training programmes for youth of COMSATS & BRI member countries, in areas such as Artificial Intelligence, Cyber Security, Data Analytics, Cloud Computing, Chip Circuit Designing, Precision Agriculture (Urban Area Soilless Vertical Farming), Tech-enabled Health Clinics, Bioinformatics and applications, Renewable Energy, and Electric Vehicles. The Executive

Director called for adequate utilization of international forums such as COMSATS and ANSO for developing technology based solutions to address global socio-economic challenges for achieving sustainable development

9th ANSO Governing Board Meeting held in Bangkok

The 9th Governing Board meeting of the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) was held in Bangkok, Thailand on December 11, 2024. The meeting was hosted by the National Science and Technology Development Agency (NSTDA), Thailand, and it was Chaired by Prof. Sukit Limpijumnong, President of NSTDA and incumbent President of ANSO.



COMSATS joined ANSO as a member in 2019 and its Executive Director, Ambassador Dr. Mohammad Nafees Zakaria, was subsequently elected as a member of ANSO Governing Board in November 2023. COMSATS is an intergovernmental organization having 27 member states from Asia, Africa, Middle East and Latin America, endeavoring to promote science, technology and innovation through South-South cooperation.

As the Governing Board member, Amb. Zakaria participated in the 9th meeting that was also attended by Prof. Hongping He, Vice President of Chinese Academy of Sciences; and other Board



ED COMSATS, Amb. Dr. Mohammad Nafees Zakaria, along with the President of ANSO, Prof. Sukit Limpijumnong, at 9th Governing Board Meeting of ANSO, held in Bangkok, Thailand

members belonging to Mongolia, Türkiye, Serbia, Senegal and Brazil. During the meeting, ANSO Progress Report 2024 was presented by Prof. LIU Weidong, Executive Director, ANSO Secretariat. The Governing Board members reviewed the membership applications and selected 9 new member organizations for consideration of the ANSO General Assembly. The Governing board members also reviewed suggested amendments to ANSO's vision and mission, and Statutes, and endorsed the draft Regulations on the use of its logo to protect its intellectual property. The members deliberated upon the organization's ongoing and planned activities, as well as strategies to strengthen collaboration among the member organizations. In all, the meeting provided direction and impetus for setting agenda for the 4th General Assembly Meeting that was decided to be held in Beijing next year.

While sharing his views, Ambassador Zakaria stated that the developing countries need support for improving their infrastructure, such as upgradation of laboratories, in order to truly reap the benefits of science and technology. Citing the example of earlier outbreak of COVID-19 pandemic, Ambassador Zakaria stated that those countries, which had adequate IT infrastructure, could offset the associated economic losses. He suggested initiation of programs to facilitate the developing countries in improving their infrastructure to support practical scientific initiatives and easing adaptability. He also proposed collaboration between COMSATS and ANSO for a joint scholarship program.

The meeting concluded with a renewed commitment to harness the collective expertise and resources of ANSO members, ensuring that science and innovation are adequately utilized to serve as key drivers for sustainable development and economic growth.

ANSO-NSTDA organized Science Seminar on 'Emerging Technologies; Executive Director COMSATS delivers Keynote Address

A Science Seminar on 'Emerging Technologies for Sustainable Development' was jointly organized by the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) and the National Science and Technology Development Agency (NSTDA) of Thailand, in Bangkok on December 12, 2024. It brought together leading scientists and researchers, subject experts and policymakers, mainly from Southeast Asia. The seminar highlighted the pivotal role of emerging technologies, the need to build stronger regional collaboration for realizing sustainable development goals and meeting global environmental and social challenges.

The Executive Director of COMSATS,



Ambassador Zakaria at the cience Seminar on 'Emerging Technologies for Sustainable Development' jointly organized by ANSO-NSTDA, in Thailand

Ambassador Dr. Mohammad Nafees Zakaria, was invited to deliver a keynote address. His talk titled 'Future of Sustainable Development and the Role of Technology'. Amb. Zakaria identified technology and knowledge gap, inadequate infrastructure, political instability, brain-drain, and financial constraints as the barriers to achieving sustainable development by the developing countries. He emphasized the need for developing countries to create enabling environment that supports knowledge generation and innovation. He made strategic recommendations such as capacity building, technological adaptation, investment in disruptive technologies, customized international legal frameworks, and supportive economic models to encourage local solutions and drive sustainable growth.

Amb. Zakaria suggested that the developing nations must promote cross-sector collaboration, and called for technology transfer and public-private partnerships among the global south. He also proposed establishing a Regional Digital Innovation Fund within COMSATS and other IGOs and regional Institutes in the developing world to support local research and start-ups, focusing on solutions that address the unique needs of the Global South.

Earlier, Prof. Sukit Limpijumnong, President NSTDA & ANSO, in his opening remarks underscored the growing importance of international scientific collaboration in the emerging technologies for addressing sustainable development challenges. He highlighted the role AI can play in addressing global challenges. Prof. Hongping He, Vice President of the Chinese Academy of Sciences (CAS), endorsing Prof. Sukit's remarks stressed innovative solutions as means to addressing future challenges and expressed CAS' support to ANSO for its scientific programs.

The seminar introduced participants to the core concept of sustainable development, helped examine the importance of emerging technologies, and offered practical insights into specific technological innovations that are essential for achieving global sustainability goals. The leading scientists and experts from Brunei Darussalam, China, Indonesia, Malaysia, Singapore, Thailand and the Philippines delivered insightful talks on topics including AI for Sustainable Future; Achieving Carbon Neutrality: A Sustainable Pathway; Clean Energy Solutions for a Greener Planet; Synthetic Biology: Nature's Solution for Sustainability; and Fostering STI Partnerships in Southeast Asia and Beyond.

The seminar concluded with a panel discussion on Fostering STI partnership in South East Asia and Beyond. The panel comprised experts from Malaysia, Thailand, China and Mongolia.



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CAPACITY-BUILDING EVENTS AND INTERNATIONAL OBSERVANCES

Capacity-building constitutes an important aspect of COMSATS' programmes for South-South Cooperation. Events in important scientific areas and those related to SDGs are regularly held to strengthen scientific linkages; build indigenous capacities; and promote S&T as a tool for development. These events provide a useful platform to the members of the scientific community, development experts, donor/development agencies, and the decision-makers in particular from Member States, to share their views and experiences on contemporary issues of importance for S&T-led socio-economic development, as well as for achieving SDGs. Advocacy of other international agenda and issues is also done, inter alia, through observance of International Days bearing various themes.



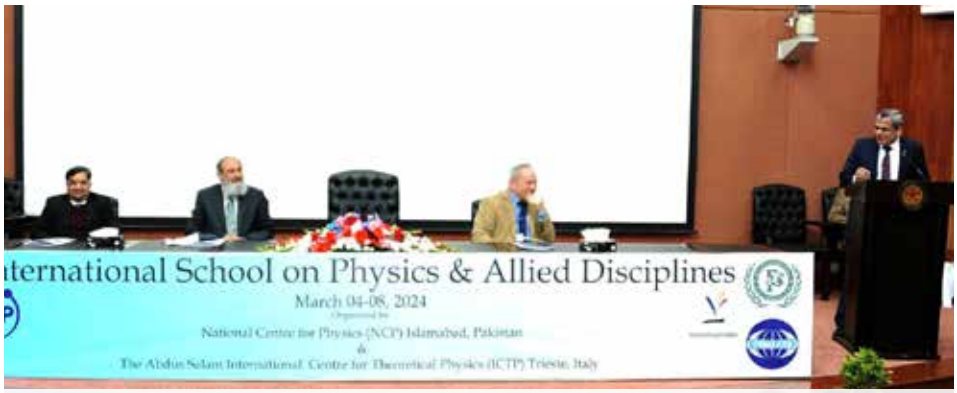
UN World Environment Day – High-Level Panel Discussion held at Ministry of Foreign Affairs (June 5, 2024)

Webinars and Trainings

Training Program, titled 'International School on Physics & Allied Disciplines (ISPAD'24)' (March 4, 2024)

The National Centre for Physics (NCP), Pakistan, organized its flagship training program, titled 'International School on Physics & Allied Disciplines (ISPAD), from March 4-8 2024, Islamabad. The event had patronage of the Abdus Salam International Centre for Theoretical Physics (ICTP), Italy, and support of COMSATS, and KTH Royal Institute of Technology, Sweden, as co-organizers.

The School provides a platform for local and foreign participants to exchange scientific knowledge and generate enthusiasm for science and innovation. Over 200 young Pakistani M.Phil./Ph.D. students, researchers, and university faculty member benefited from the training, which was conducted by local and foreign subject expert.



Amb. Dr. M. Nafees Zakaria addressing participants of 'International School on Physics & Allied Disciplines (ISPAD), held from March 4-8 2024, Islamabad

Dr. Qaiser Ahsan, Director NCP, delivered the welcome remarks during the inaugural ceremony of ISPAD, held on 4th March 2024. He expressed gratitude to the Chief Guest, Executive Director COMSATS, Ambassador Zakaria, and gratefully acknowledged the presence of foreign guests.



Addressing the inaugural ceremony, Ambassador Zakaria, emphasized the pivotal role of high-energy and condensed matter physics in uncovering the Universe's fundamental essence and material behaviors. He highlighted the potential for revolutionary innovation through the synergy between artificial intelligence and physics, leveraging advanced computational techniques for scientific inquiry.

Ambassador Zakaria highlighted the pivotal role of regional and international cooperation in ST&I, particularly through South-South and Triangular cooperation. He also elucidated the role of COMSATS as an inter-governmental organization dedicated to advancing science, technology, and innovation-led sustainable development across its 27 Member States. He highlighted COMSATS' efforts in promoting South-South and Triangular Cooperation in science and technology, facilitating exchanges, knowledge networking, capacity-building, and collaborative research among member countries. He underscored COMSATS recent initiatives in fields like Artificial Intelligence-based data analytics, IT trainings, precision agriculture, renewable energy, and electric vehicles.





Amb. Zakaria commended the National Centre for Physics for its noteworthy contributions to the advancement of science and technology. He also committed to strengthening ties with organizations like NCP and ICTP to enhance capacity-building efforts for developing countries.

The inaugural ceremony also featured talks by Dr. Joseph J. Niemela, Senior Scientist (Emeritus) and Advisor International Programs, ICTP, Italy, and Dr. Ishaq Ahmed, Director-General COE, NCP.

The four-day School consisted of plenary, parallel and poster sessions, as well as tutorials and structured discussions relevant to various technical activities in the chosen topics. The training concluded on the 8th March 2024.

Training Workshop on 'Sexual and Reproductive Health' (March 6-8, 2024)

A refresher training on Sexual and Reproductive Health (SRH) for telemedicine providers was organized by COMSATS, in collaboration with World Health Organization (WHO), Pakistan, for the doctors working at COMSATS Telehealth resource Centre. A similar training was organized by COMSATS and WHO in 2020 to support the Telemedicine providers of three organizations including COMSATS. This time, 15 doctors from COMSATS Telehealth Resource Centre attending the training workshops that spanned over a period of 3 days.

The aim of the training was to support the family physicians/general physicians at COMSATS Telehealth, in achieving



Participants of the Training Workshop on 'Sexual and Reproductive Health', held from March 6–8, 2024

personalized learning goals in Sexual reproductive health that are aligned with latest WHO guidelines and Telehealth practices.

The training initiated with brief introductions of the speakers and the participants followed by short pre-training assessment of the participants. The focal person of WHO Pakistan, Dr. Sayema Awais shared the status of SRH in Pakistan and gave overview of national comprehensive Guidelines on the topic in Pakistan and also distributed its copies among the participants. She informed the participants that the core content of the guidelines include preconception care, antenatal, intra- natal and postnatal care, along with family planning and selfcare sections.

Elaborating on the topic of antenatal care, Speaker Dr. Samina Naeem, consultant Gynaecologist emphasized that antenatal care aims to provide a women integrated care throughout pregnancy with the aim to reduce complications and timely referrals to avoid perinatal deaths. Dr Samina explained the important aspects of antenatal care e.g maternal and fetal assessment, nutritional evaluation and physiological symptoms worth paying attentions through examples during her own experience. The Antenatal care was followed by presentations on Routine Care in labour and delivery emphasizing on the timing and the need of referral.

On the second day the speakers specifically highlighted postpartum care, family planning and mental health disorders related to SRH. Dr. Nabia Tariq, Consultant Gynaecologist & Director Academics Maroof International Hospital Islamabad discussed various family planning methods, their pros and cons through activity based interactive and collaborative learning approach. She specifically emphasized on the counselling techniques that is the most difficult step in contraception.

Dr Maimoona Saadi, the technical officer, Mental Health, WHO gave insights into the mental health issues related to SRH, especially postpartum depression(PPD). She shared with the participants that every 1 in 10 patients suffer from PPD that makes it necessary for the primary care providers to differentiate the PPD with baby blues through symptoms and know the counselling and educative measures for treatment.

The last speaker for the day was Dr. Ayesha Babar, Al-Shifa School of Public Health who appraised the participants of the importance of the postpartum as 2/3rds of the apprx 500,000 women that die every year due to pregnancy-related complications, are in the postpartum period. She elaborated on the timings of



the discharge of the patients from hospital and discussed in detail the signs and symptoms to look for on follow-up visits at third day, 7-14 day and at six weeks.

Dr. Ayesha Babar covered the postpartum care in two phases. Phase one was presented on day two of the training while the rest of the presentation was completed on the last and final day. On the last day she also discussed the new born care with the participants. She provided detailed insight on the routine checkups, red-flags and abnormal signs to look for in the new born.

Dr. Sayema Awais, shared the self-care interventions with the participants that may help the trained physicians for their personal care and can be passed on to the patients when needed. Other than the topics discussed during the previous days, she focused on the Sexually transmitted diseases, new recommendations on self-screening with ovulation predictor kits (OPKs) for fertility regulation, family planning and elimination of unsafe abortion through self-care. The last presentation of the day was abortion care presented by Dr. Samina Naeem, who elaborated on the complications of unsafe abortion, how to recognize the danger signs and appropriate treatment accordingly. She also explained the relevant laws within Pakistan and the circumstances where it is allowed.



Dr. Ellen Thom, Team Lead MNCH, WHO, and Ambassador Dr. M. Nafees Zakaria, Executive Director COMSATS, addressing the participants of the training workshop

Closing session of the training was held on the third day. Amb Dr Mohammad Nafees Zakaria, Executive Director COMSATS was the chief guest of the ceremony. Dr Ellen Thom, Team lead MNCH, WHO, also attended the session on the behalf of her organization. In her introductory remarks Dr. Sayema Awais recapped the three days of training workshop followed by the vote of thanks presented by Dr. Azeema Fareed, Additional Director (Health) and Incharge Telehealth, COMSATS. She expressed gratitude on behalf of the COMSATS to the partner organization WHO and the worthy speakers for the support that made the three day workshop possible.

Talking on the occasion, Ms. Ellen Thom referred to the previous workshop conducted back in 2020 and expressed her pleasure to be part of the training "as coming back home". She stated how Telemedicine was a new thing back then however it has become a norm since COVID. She also pledged to continue collaboration with COMSATS in future.

Speaking on the occasion, the Executive Director COMSATS expressed his hope that the skills and knowledge received by the Telehealth physicians during the workshop will in turn benefit their patients who hail from the areas that are hard to reach to healthcare. He highlighted the workshop as symbol of COMSATS' commitment to leveraging technology for better healthcare and enhancing its effectiveness through capacity building of the providers. He appreciated the dedication of the doctors working at Telehealth and lectured that the responsibility you shoulder today extends far beyond the confines of this workshop i.e to the communities that you serve.

The closing ceremony was followed by cake cutting ceremony, celebrated in the context of International Women's Day that coincided with the last day of the training.







Ambassador Dr. Zakaria addressing the participants of the International Forum on "Modern Trends in Sustainable Development of Biological Sciences," held at KazNU in Almaty

In summary, the training provided a quick refresher for the physicians working with COMSATS Telehealth elaborating on many new guidelines and aspects that might have been different when the doctors last received any formal training.

International Forum on Modern Trends in Sustainable Development of Biological Sciences (27-28 March 2024)

The International Forum on "Modern Trends in Sustainable Development of Biological Sciences" was held from 27–28 March 2024 at Al-Farabi Kazakh National University (KazNU) in Almaty, Kazakhstan. This high-level academic gathering was jointly organized by KazNU, COMSATS, the OIC's Ministerial Standing Committee on Scientific and Technological Cooperation (COMSTECH), and the Institute of Dendrology, Azerbaijan National Academy of Sciences. The Forum was convened to commemorate the 90th anniversary of KazNU and its Faculty of Biology and Biotechnology, and was hosted in a hybrid format at the university's Al-Farabi Scientific Library.

The primary objective of the Forum was to facilitate discussions on recent advancements in the field of biological sciences, deliberate on global challenges related to biotechnology and biodiversity, and build an international network of scientists, educators, and policymakers. The conference served as a dynamic platform to exchange modern scientific knowledge and interdisciplinary research experiences, with a focus on sustainability, innovation, and resilience. The event received around 200 applications from 104 institutions and organizations across 14 countries, including Kazakhstan, Germany, France, China, Japan, Turkey, Pakistan, Malaysia, Nigeria, Russia, Azerbaijan, Kyrgyzstan, Uzbekistan, and Tajikistan. After undergoing mandatory plagiarism screening and double-blind peer review, over 127 research articles were accepted for publication in the BIO Web of Conferences, indexed in international scholarly databases, including Scopus.

The inaugural ceremony, held on 27th March 2024, was opened by Prof. Aitzhanova Zhamila Nurmatovna, Vice Rector for Science and Innovation at KazNU. Prominent figures delivering opening remarks included Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS; Prof. Dr. Muhammad Iqbal Choudhary, Coordinator General COMSTECH; Mr. Vlastimil Samek, Head of the United Nations Information Office



Participants of the International Forum on Modern Trends in Sustainable Development of Biological Sciences, KazNU, in Almaty, Kazakhstan



in Kazakhstan; and Prof. Hasanova Minara Yunis, Acting Director General of the Institute of Dendrology, Azerbaijan. These remarks set the tone for a collaborative and intellectually rich conference.

In his keynote address delivered virtually, Ambassador Dr. Mohammad Nafees Zakaria underscored the pivotal role of biological sciences in shaping modern solutions for critical areas such as medicine, agriculture, food security, clean energy, and environmental protection. He emphasized biotechnology's emergence as a leading trend, citing developments in genetic engineering and synthetic biology. He further noted that the integration of artificial intelligence and machine learning has significantly accelerated biological research, enabling faster discovery and response to complex, interlinked global challenges. Ambassador Zakaria reiterated COMSATS' commitment to supporting its Member States through targeted capacity-building programmes and highlighted initiatives such as the establishment of the COMSATS Joint Centre for Industrial Biotechnology (CCIB) at TIB, China, as a concrete manifestation of this commitment.

Ambassador Zakaria also shared a range of new and ongoing initiatives led by COMSATS, including capacity development in AI-based data analytics, genome sequencing for precision medicine, IT training, precision agriculture, renewable energy, electric vehicle technology, drone applications, and health tech solutions. He conveyed COMSATS' interest in forging strong collaborations with like-minded institutions to support socio-economic development and achieve the United Nations Sustainable Development Goals (SDGs). In closing, he appreciated the growing partnership between COMSATS and KazNU and expressed optimism for continued joint initiatives.

The Forum's scientific programme included technical sessions organized into four main sections: (1) interdisciplinary



research in biophysics, biomedicine, and neuroscience; (2) current challenges in biotechnology, microbiology, and bioengineering; (3) fundamental and applied research in genetics and molecular biology; and (4) biodiversity studies and conservation. The plenary sessions were conducted in two stages, with the first part featuring official opening remarks and scientific presentations by globally renowned experts. These included Prof. Dos Dzhurmakhanbet Sarbasov, Director of the Astana National Laboratory, Kazakhstan; Prof. Zhiyong Huang, Tianjin Institute of Industrial Biotechnology (TIB-CAS), China; Prof. Saitou Naruya, National Institute of Genetics, Japan; and others from Hungary and Turkiye. The second part of the plenary session included contributions from senior scholars and heads of biological research institutions in Kazakhstan.

COMSATS supported the participation of four researchers from TIB, China, reflecting its commitment to advancing industrial biotechnology within its network. Furthermore, Dr. Huma Balouch, Deputy Director at the COMSATS Secretariat, was among the invited speakers and shared valuable insights on applied biological sciences and regional collaboration.

During the Forum, a Memorandum of Cooperation was signed between Al-Farabi Kazakh National University and the Institute of Dendrology of Azerbaijan's Ministry of Science and Education, marking a significant step in regional scientific diplomacy. The broad participation from academia and research institutions, along with representation from the United Nations and intergovernmental organizations like COMSATS and COMSTECH, reflected the relevance and global significance of the topics discussed.

The Forum concluded with the adoption of a comprehensive resolution, acknowledging the success of the event and recommending its continuation as a periodic scientific gathering. The resolution emphasized the need for integrating engineering and artificial intelligence into biological sciences; fostering public-private partnerships for research commercialization; expanding regional cooperation to tackle climate change, biodiversity loss, and global health challenges; and increasing participation from business sectors interested in biotech applications. The resolution also expressed deep appreciation for the organizers, scientific committee, editorial board, and all participants for their dedication to advancing the field of biological sciences and for contributing to the success of the event.

Through this high-impact academic initiative, COMSATS reaffirmed its commitment to promoting science-based solutions for sustainable development in the Global South, while strengthening collaborative ties with leading institutions across the OIC region and beyond.

Eighth Term of ANSO-BIDI School (April 24, 2024 to 14 June 2024)

From the platform of the Belt & Road International Innovation Development Institute Network (ANSO-BIDI Institute Network), COMSATS, the Centre for Environmental Economics of the University of Chinese Academy of Sciences (CEE-UCAS), the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO), and other members of ANSO-BIDI Network, collaborated to organize the eighth term of ANSO-BIDI School (online training), titled 'Innovation, Sustainable Development and Leadership Enhancement'.



The training program aimed to enable participants to drive positive change and growth in their respective organizations and communities. The training had 8 modules spanning over 2 months, during which distinguished subject experts from renowned universities and prestigious international organizations delivered lectures on several topics, including Supply chain and sustainable development; ESG and Green Finance; Computer Science and Engineering; Innovation, Environment and Sustainability; and IEEE ARTC symposium.

The opening ceremony of the event was held virtually on 24th April 2024. The ceremony was opened by Prof. Desheng Wu, Director of the Research Centre for Environmental Economics of UCAS, China. Moreover, various leaders from collaborating organizations, including Dr. Guo Lugang, Vice President of Beijing Association for Science and Technology (BAST), China; Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, Prof. Avid Budeebazar, General Secretary of the Mongolian Academy of Sciences, Mongolia, Prof. Dr. Hasan Mandal, President, The Scientific and Technological Research Council of Turkiye (TUBITAK), Turkiye; and Prof. Luis Seco, Professor, University of Toronto, Canada, addressed the audience at the opening ceremony.

During his address, Amb. Zakaria, emphasized that the path to sustainable development is laden with challenges, especially for developing nations contending with scarce resources and infrastructure. He underscored the significance of tech-based solutions, education, and innovation for fostering sustainable development in the Global South. He also highlighted leadership enhancement as priorities for navigating nations adeptly through the complexities of our interconnected world and effectively channeling resources.

Amb. Zakaria noted that COMSATS has been facilitating S&T exchange, knowledge networking, capacity-building, and collaborative research and development among its 27 Member States. Amb. Zakaria reflected upon the ongoing mutually advantageous cooperation between COMSATS, ANSO, and UCAS, and reaffirmed COMSATS' unwavering dedication to sustained active collaboration with the ANSO-BIDI Institute Network in promoting scientific excellence, building capacity, and nurturing leadership development among individuals in developing countries. Amb. Zakaria conveyed his sincere appreciation to the organizing committee of the training, trainees, and subject experts (Speakers) for their invaluable contributions to this highly significant event, and also expressed gratitude to the leaders of the partner organizations for their collaboration.

The technical modules of the training course, inter alia, included: 'ESG and Green Finance' (conducted by Prof. Luis Seco, University of Toronto, Canada), 'Cyber-physical Systems' (conducted by Prof. Peng Shi, University of Adelaide, Australia), 'Benefits of New Technology - the Case of Autonomous Vehicles' (conducted by Prof. Opher Baron, University of Toronto, Canada), 'Representing Spatial Data by Maps' (conducted by Prof. Philippe de Maeyer, Ghent University, Belgium), and 'Innovation, Environment and Sustainability' (conducted by Prof. David Olson, University of Nebraska).

On recommendation made by COMSATS Secretariat, 68 trainees belonging to various Centres of Excellence and Member Countries of COMSATS, including Iran, Kazakhstan, Nigeria, Pakistan, and Tanzania, participated in the training course.

Training Workshop on Carbon Markets and Carbon Credits (30 April 2024)

Recognizing that there is a pressing need to raise awareness and build capacity among stakeholders about carbon market mechanisms, especially in light of the discussions and developments made during COP28, where Article 6 played a pivotal role, COMSATS Centre for Climate and Sustainability (CCCS) organized an in-house training workshop on Carbon Credits and Carbon Markets, at COMSATS Secretariat on 30th April 2024.

The workshop agenda encompassed a comprehensive overview of Carbon Credits and Carbon Market, Carbon Trading Mechanisms, Project Cycle and Key Players in the Carbon Market. Participants gained insights into Core Carbon Principles and Project Integrity, understanding their own carbon footprints, and theories applied in setting up National Emissions Trading Systems. Additionally, discussions covered carbon trading prospects in Pakistan, emerging carbon trading policy frameworks, and real-world case studies.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, delivered the opening remarks, emphasizing the significance of leveraging carbon markets for common benefit. He highlighted COMSATS' role as an intergovernmental organization with a network of 25 Centers of Excellence, poised to unlock the benefits of carbon credit and carbon market. Dr. Zakaria stressed the importance of reducing all sources of GHG emissions close to zero and encouraged participants to seek guidance from experts on the basics, regulations, and issuance process of carbon credits.



(From L to R): Dr. Sohail Malik, Technical Team Leader at CRCC; Dr. Mazhar Hayat, Deputy Secretary at MoCC&EC; and Ms. Minha Hanif, Climate Change Analyst at Resources Future, addressing the Training Workshop held at COMSATS Secretariat, Islamabad

Dr. Sohail Malik, Technical Team Leader at the Climate Resourcing Coordination Centre (CRCC), shared insights on Carbon pricing instruments for achieving decarbonization objectives, including emission trading systems, and provided an overview of international practices. He delved into the evolution of carbon markets globally over the last two decades and elucidated the Carbon Offset Project Certification Process.

Dr. Mazhar Hayat, Deputy Secretary at the Ministry of Climate Change and Environmental Coordination (MoCC&EC), Government of Pakistan, presented a case study on project registration with carbon standards Verra. He provided detailed insights on Delta Blue Carbon, outlining the preparation document required for Carbon credit





Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, delivering the opening remarks at the Training Workshop on Carbon Markets and Carbon Credits held at COMSATS Secretariat







and offset projects. Dr. Hayat explained the potential integration of carbon credit and offsets toward Pakistan's Nationally Determined Contributions (NDCs) and also highlighted the efforts of Government of Pakistan in reducing major emissions. Moreover, he offered an overview of emerging global Carbon markets and the impact of their price variation on decision-making processes.

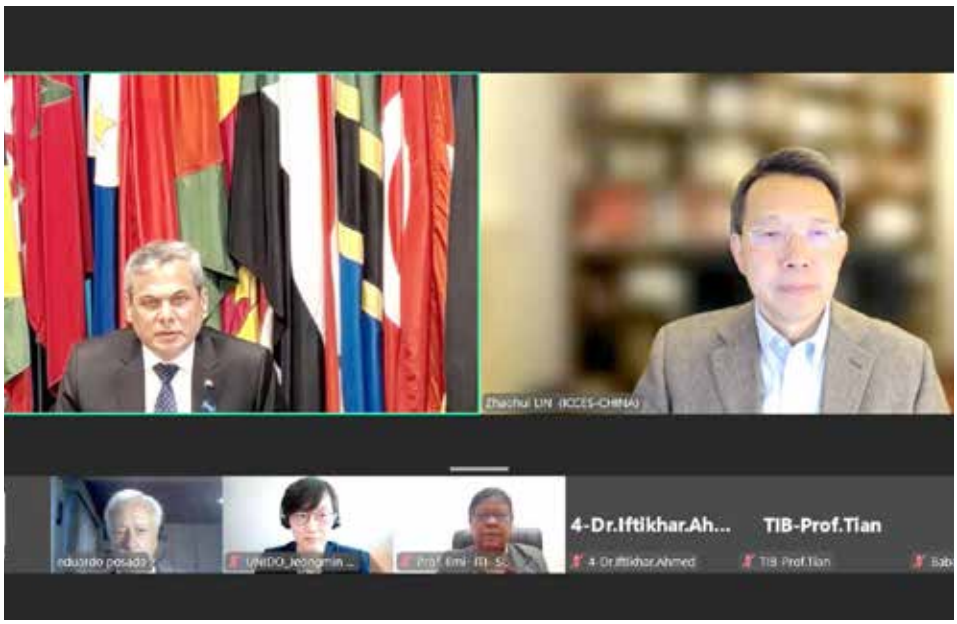
Ms. Minha Hanif, Climate Change Analyst at Resources Future, provided participants with insights into the project cycle of carbon credits, the Core Carbon Principles including governance and sustainable development, and the concept of project baseline, boundaries, and leakages. She engaged in an interactive discussion with participants, posing questions about some case projects to enhance their understanding of the types of projects that generate carbon credits.

Expert Panel Discussion at UN STI Forum (May 10, 2024)

On May 10, 2024, COMSATS hosted a panel discussion of scientific experts as part of the 9th Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals, under the sponsorship of the UN Economic and Social Council (ECOSOC). The session was titled "Catalyzing Change: Science, Technology, and Innovation in the Global South".

The discussion session was moderated by Executive Director COMSATS, Amb. Dr. M. Nafees Zakaria. The Panelists were from COMSATS Centres of Excellence in China, Sri Lanka and Columbia, namely Prof. Lin Zhaohui, Director, International Centre for Climate and Environment Sciences (ICCES), China; Prof. Eduardo Posada, Director, International Centre for Physics (CIF), Colombia; Prof. Chaoguang Tian, Deputy Director-General (International Cooperation), Tianjin Institute of Industrial Biotechnology (TIB), China; Prof. I.G.N. Hewajulige, Additional Director General (Research and Development), Industrial Technology Institute (ITI), Sri Lanka; as well as UNIDO-Austria.

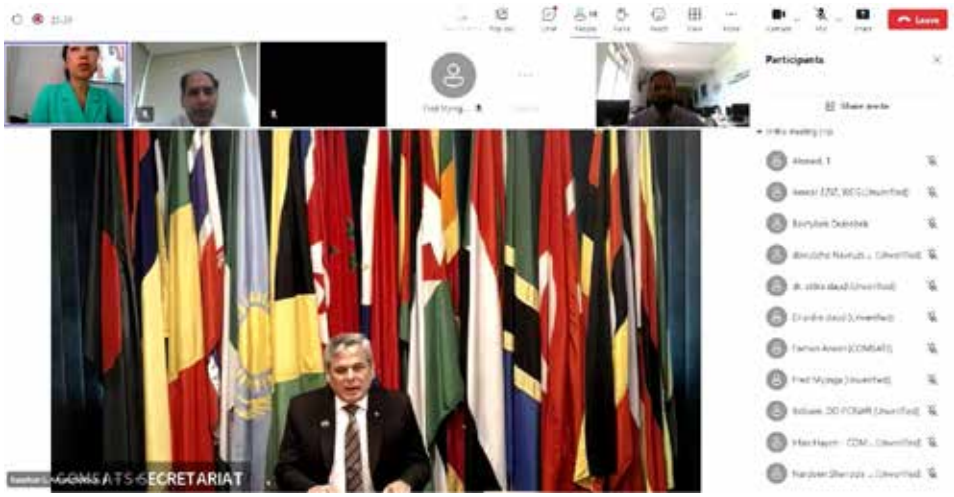
The experts followed the theme of the 9th Forum: "Science, Technology and Innovation for reinforcing the 2030 Agenda and Eradicating Poverty in Times of Multiple Crises: The Effective Delivery of Sustainable, Resilient and Innovative Solutions". They deliberated upon the role of qualified and skilled human capital,



South-South cooperation, and significance of emerging technologies in facilitating sustainable development.

The panelists shared their respective organization's activities in the context of contributing to achieving SDGs, and were unanimous in their resolve for effective utilization of tech-based solutions, emerging and disruptive technologies, for addressing the contemporary challenges.

Ambassador Zakaria stressed that high tech solutions are pivotal for mainstreaming the developing countries and bringing them at par with the developed world.



Training Workshop titled 'Sustainable Water and Land-use in Arid Regions with RS-GIS Applications support based on Chinese Expertise' (August 12, 2024)

The COMSATS University Islamabad (CUI) and Xinjiang Institute of Ecology and Geography (XIEG) successfully organized the training workshop, titled 'Sustainable Water and Land-use in Arid Regions with RS-GIS Applications support based on Chinese Expertise', in Almaty, Kazakhstan, from 12-16 August 2024. The workshop had patronage of the Alliance of National and International Science Organizations for the Belt and Road Regions (ANSO) that graciously provided funding for the event, as well as support of COMSATS Secretariat. Collaborators from Kazakhstan included, Kazakh British Technical University (KBTU) and Kazakh National Agrarian Research University (KazNARU).

Over 350 researchers and subject experts from various countries, including, Benin, Belgium, China, Egypt, Ethiopia, Jamaica, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Palestine, Senegal, Sri Lanka, Tajikistan, and Tanzania, benefited from the training that was held in hybrid mode.

The main objective of the workshop was to train the trainers, especially college and university instructors and practitioners working with communities and farmers on environmental issues, and to provide support to communities to deal with emergency situations, mitigate and reduce disaster risks. The training was based on Chinese expertise in RS-GIS applications and modeling that allowed the individuals to upgrade their skill to the level of an expert.

The opening ceremony of the workshop was held on 12th August 2024. Dr. Toqeer Ahmed, Visiting Researcher, XIEG, CAS, China and CUI, Pakistan, made welcome remarks at the ceremony, which also included remarks by leaders representing various participating organizations. Ambassador Dr. Mohammad Nafees





Participants of the Training Workshop on 'Cloud Solution Implementation at Data Centre', organized in collaboration with M/S KhasTech Solutions (KTS), at CIS Technology Park, Islamabad

Zakaria, Executive Director COMSATS, in his opening address, emphasized the importance of sustainable water and land-use in arid regions, highlighting the critical role of innovative technologies, such as RS-GIS. He acknowledged the wealth of expertise available with Chinese scholars and practitioners, urging the participants to make best use of the opportunity to leverage their knowledge for addressing the unique challenges faced by communities in arid regions. Amb. Zakaria also underscored the need for wider collaboration and shared insights on how to develop resilient practices that can effectively combat the impacts of climate change and resource scarcity with an aim to ensure a sustainable future for all.

The workshop featured 18 presentations, primarily focused on RS-GIS applications in agriculture, EE Mitigation, Disaster Risk Reduction (DRR), Emergency preparedness and the management of water and land resources. The subject experts and trainers, inter-alia, belonged to Belgium, China, Pakistan, Iran, Kazakhstan and Ethiopia.Engaging discussions and deliberations throughout the sessions promoted a vibrant exchange of ideas and facilitated knowledge sharing among participants. Both theoretical and hands-on sessions were held in dual language to make the training more effective.

The objectives of the workshop were in line with the UN Sustainable Development Goals (SDGs), i.e., focusing on RS-GIS applications in sustainable agriculture that support biodiversity. The workshop contributed towards various Sustainable Development Goals, including SDG-2 (Zero Hunger), SDG-4 (Quality Education), SDG-6 (Sustainable Water Management), and SDG-11 (Sustainable Cities and Communities).

The in-person participants of the workshop also visited the Sustainable Development and Environmental Management Research Centre; Al-Farabi Kazakh National University (KazNU); and Research Center for Ecology and Environment of Central Asia, in Almaty, and gained useful exposure and expertise.

COMSATS-KTS Training on Cloud Computing Solutions Implementation (August 28, 2024)

COMSATS Secretariat, in collaboration M/S KhasTech Solutions (KTS), successfully organized a five-day training workshop on Cloud Solution Implementation at Data Centre that concluded on August 28, 2024. The activity was organized under the framework of MoU signed between two organizations on May 16, 2024, aimed at collaborating to developing IT enabled solutions and conduct professional capacity building programs. HRD in various fields including Information and Communication Technology (ICT), DevSecOps, Information and Cyber Security (I&CS), Management, Business, Health, Cloud Computing, Medicine and related technologies are the focus.

The workshop was a part of a technology upgrade measures under the initiative of Executive Director, Ambassador Dr. Mohammad Nafees Zakaria, for operational improvements of the existing infrastructure at CIS-Data Centre and as part of capacity building of technical team at CIS for upskilling their operational capabilities.

The training was designed to update the skills and expertise of the COMSATS Internet Services (CIS) to optimally use the newly installed and implemented infrastructure. The participants from different operational departments benefited from the training.

The closing ceremony held on August 28,



2024 and Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS along with Dr. Ashraf Masood, CEO KTS, distributed the training certificate among the participants. The Executive Director expressed satisfaction over the completion of the training and hoped that skills and experiences gained during this training will prove to be invaluable in performing professional assignments.

COMSATS' initiative of datacenter upgradation with competent professionals has enabled CIS to offer number of advantages to its current and potential users including, enhanced data security and integrity; increased uptime; disaster recovery; high performance computing, high availability; scalability; increased reliability; and optimized networking. These services are also being offered to COMSATS' Member States.

Workshop on Metagenomics-based Approaches for Viral Disease Surveillance (September 16-19, 2024)

COMSATS, in collaboration with its Centre of Excellence, COMSATS University Islamabad (CUI), organized an international workshop titled "Metagenomics-based Approaches for Viral Disease Surveillance," under the International Centre for Genetic Engineering and Biotechnology (ICGEB) framework for Meetings and Courses in 2024. This four-day event took place from September 16-19, 2024, and was primarily funded by ICGEB.

The workshop aimed to stimulate discussions and collaborations around the opportunities and challenges in using metagenomics for viral disease surveillance, particularly in modeling predictive pandemics and outbreaks. It sought to identify key scientific areas that could benefit from metagenomic analysis and emphasized the role of this approach at the intersection of metagenomics and public health research. The training enhanced the scientific competence of over 25 international participants from COMSATS member countries and 27 local researchers by providing both theoretical knowledge and hands-on laboratory experience in metagenomic techniques. The training also focused on translating metagenomics-based microbiome research into significant applications in genomic surveillance, equipping both early-career researchers and future students with lifelong learning skills.

The inaugural session of the workshop was held on 16th September 2024. Dr. Khalid Maqbool Siddiqui, Minister for Science and Technology, Government of Pakistan, the Chief Guest, in his message read out



Ambassador Zakaria addressing the inaugural session of the Workshop on 'Metagenomics-based Approaches for Viral Disease Surveillance' held at CUI, Islamabad



Dr. Mehwish Durani
Head CCCS



Dr. Emanuele Buratti
Scientific Coordinator, ICGEB



Amb. Dr. Nafees Zakaria
ED COMSATS



Prof. Dr. Sajid Qamar
Rector CUI

on the occasion by Dr. Mehwish Durani, Head COMSATS Centre for Climate and Sustainability (CCCS) emphasized the urgent need to respond to the rapid pace of emerging technologies. Honourable Minister highlighted biotechnology and bioinformatics as essential components in addressing challenges such as food security and healthcare. He further called for robust viral disease surveillance to prevent future pandemics, particularly in developing countries.

Dr. Emanuele Buratti, Scientific Coordinator at ICGEB, acknowledged ICGEB's commitment to advancing biological sciences and innovation in low- and middle-income countries, commending COMSATS for organizing this impactful workshop.

Ambassador Dr. Nafees Zakaria, Executive Director of COMSATS, addressed the global concerns surrounding emerging viruses and antimicrobial resistance, exacerbated by climate change and health inequities. He highlighted the pandemic's role in accelerating innovations in science and public health governance and emphasized COMSATS' efforts in fostering research and cooperation among its member states.

Prof. Dr. Sajid Qamar, Rector of CUI Islamabad, noted that with appropriate policy support, Pakistan could leverage bioinformatics to become a regional leader in life sciences and public health research.

This capacity-building workshop attracted experts from prestigious institutions such as ICGEB Italy, the Royal Scientific Society in Jordan, King's College London, and the International Center for Chemical and Biological Sciences in Karachi. Designed as a hybrid event, it offered both in-person and virtual participation, making advanced training accessible to a wider audience. Trainees included early-career scientists and postgraduate researchers from Pakistan as well as international participants from Bangladesh, Ethiopia, Jordan, Kazakhstan, and Sudan.

The technical proceedings of the four-day training workshop on Metagenomics for Viral Disease Surveillance provided an in-depth blend of theoretical knowledge and practical application aimed at building participant capacity in advanced bioinformatics tools and metagenomic technologies. Dr. Silvano Piazza from ICGEB, Italy, delivered comprehensive sessions on the fundamentals and advancements in viral metagenomics, covering its role in climate-biodiversity-disease interlinkages, viral ecology, sequencing technologies, and applications in disease surveillance and pandemic preparedness. His presentations emphasized the value of metagenomics in identifying environmental DNA viruses, emerging pathogens, and zoonotic threats while introducing amplification methods such as MDA, MALBAC, and DOP-





PCR. He also explored future directions involving AI, big data, and machine learning in virome analysis. His practical session familiarized participants with key tools like Conda, Docker, and VirtualBox, and provided hands-on training on quality control processes and host-read removal.

On the second day, the keynote by Prof. Dr. Syed Habib Bukhari, Vice Chancellor of Kohsar University Murree, Pakistan, offered insights into the global health dimensions of viral diseases and the potential of emerging technologies in shaping national and global health security landscapes. Dr. Iqbal Qureshi from ICCBS, Karachi, Pakistan, provided deep theoretical and hands-on knowledge on viral taxonomy, introducing Kraken and Kaiju classification tools, emphasizing speed, accuracy, and challenges in long-read sequencing and database limitations. Dr. Mumen Alwarshdeh from RSS Jordan introduced trends in Next-Generation Sequencing (NGS), its application workflow, and limitations, along with in-depth sessions on bioinformatics prerequisites and implementation in diagnosis and surveillance. He presented critical views on taxonomic classification, viral detection workflows, and future innovations. Prof. Dr. Ramla Shahid of Kohsar University offered an advanced perspective on G-quadruplex structures, their regulatory functions, gene expression, and future applications in drug development and biotechnology.



The third day opened with Dr. Hanna'a Iqbal from ICCBS elaborating the experimental workflows in viral metagenomics, discussing clinical applications, nucleic acid extraction, sample processing, qPCR methods, and contamination control. Dr. Mumen returned to lead a session on the EDGE bioinformatics tool, presenting its modular architecture for data analysis and visualization, reinforced through a case study on respiratory infection surveillance. Dr. Waseem Haider from COMSATS University offered a comprehensive session



Ambassador Zakaria presenting a shield to the Chief Guest at the Concluding Session, Prof. Dr. Shahzad Ali Khan, Vice Chancellor of the Health Services Academy, Islamabad. The Rector of CUI also graced the occasion with his presence.

on DNA sequencing technologies—from Sanger to Third-Generation Sequencing—and led discussions on RNA sequencing, data formats, and experimental design in genomics.

The final day featured advanced sessions on transcriptomics and cloud-based tools. Dr. Waseem trained participants in differential gene expression analysis using DAVID and GEO databases, while Dr. Azeem Mehmood Butt from King's College London introduced the CZ ID platform for pathogen detection and surveillance. His session demonstrated its utility in analyzing raw metagenomic data and interpreting pathogen dynamics, supported by a case study on pangolin-transmitted viruses. Throughout the workshop, the technical content was enriched with case studies, tutorials, and practical demonstrations, offering participants valuable exposure to modern techniques in viral metagenomics, with clear relevance to global health, disease surveillance, and early-warning systems.

The closing session, held on September 19, 2024, was presided over by Prof. Dr. Shahzad Ali Khan, Vice Chancellor of the Health Services Academy, Islamabad, Pakistan. He remarked on the societal tendency to prioritize treatment over prevention and emphasized the need for preventive measures targeting entire populations or high-risk groups. He praised the workshop as a crucial platform for ongoing discussions and collaborations aimed at fostering a sustainable and resilient public health system.

Collaborative Action Against Smog: COMSATS and Partners Address Mountain Region Challenges (December 6, 2024)

COMSATS, in collaboration with the National Disaster and Risk Management Fund (NDRMF) and Kohsar University, held an impactful event on the theme "Addressing Smog and Its Challenges in Mountain Regions" at Kohsar University, Murree on 6th December 2024. The event brought together leading experts, academics, and policymakers to discuss the multifaceted impacts of smog on public health, the environment, and economic resilience, particularly in mountainous areas.

The inaugural remarks were delivered by Prof. Dr. Syed Habib Bokhari, Vice Chancellor of Kohsar University, who shed light on the devastating health impacts of smog. He highlighted that globally, smog contributes to an alarming 7 million premature deaths annually, with Pakistan's urban centers such as Lahore and Karachi experiencing drastic reductions in life expectancy. Vulnerable populations—including children, women,







Amb. Dr. M. Nafees Zakaria



Mr. Bilal Anwar



Prof. Dr. Syed Habib Bokhari

and the elderly—are at greater risk of respiratory and cardiovascular diseases, strokes, and cognitive impairments. Dr. Bokhari stressed the need for robust and immediate actions to mitigate these risks, especially in mountainous regions where the implications of smog are compounded.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, emphasized the cross-cutting nature of smog and its wide-ranging impacts on sustainable development goals (SDGs). He underlined that smog disrupts education, tourism, and economic productivity—challenges that are magnified in mountain regions. Ambassador Dr. Zakaria called for government to incentivize cleaner transportation, promote electric vehicles (EVs), and enforce sustainable tourism and waste management practices. He also highlighted COMSATS' initiatives to leverage scientific expertise in addressing climate change and air quality issues, such as the conversion of internal combustion engine (ICE) vehicles to electric vehicles using indigenous resources. This transformation, he noted, would not only reduce smog but also cut Pakistan's fuel import bill, freeing resources for other industrial necessities.

Dr. Zakaria further underscored the importance of academic and business collaboration in tackling climate change-related challenges like smog. "The integration of academia's research capabilities with the resources and innovation of businesses is crucial for creating scalable and sustainable solutions," he stated.



Mr. Bilal Anwar, CEO of NDRMF, acknowledged the critical importance of addressing smog in Pakistan and highlighted the need for authentic data, robust infrastructure, and reliable air quality monitoring systems to drive informed decision-making. Mr. Anwar advocated for the use of advanced technologies, including satellite data integrated with ground sensors, to enhance the accuracy and reliability of air quality measurements. He emphasized the role of scientifically driven solutions in combating smog and building resilient communities.

Dr. Qaiser Imran, Environmental Specialist, National Institute of Disaster Management (NIDM) delivered a presentation highlighting the National Emergency Operation Centre's role at NDMA in monitoring the ongoing smog situation in Pakistan and the surrounding region. The Centre utilizes advanced ground-based and space-based monitoring tools, enabling the analysis and projection of sectoral pollution emissions from various sources, including industry, transportation, and agriculture.

In addition to the discussions, the event featured a plantation drive and a nature walk, starting from the Resource Centre Murree (RCM) Dairy Farm and extending to Kashmir Point near the Governor's House, further emphasizing the importance of community engagement in environmental conservation.

The event concluded with a call to action for stronger collaboration among government, academia, and the private sector to address the root causes of smog and implement effective mitigation strategies. The discussions reaffirmed the urgency of adopting science-based, innovative, and sustainable approaches to safeguard public health and protect the environment, especially in vulnerable regions like Murree and other mountainous areas.



Amb. Dr. M. Nafees Zakaria | Dr. Sania Nishtar | Prof. Dr. Quarraisha Abdool Karim | Prof. Dr. Rana Dajani

International Events

Webinar on 'Women in Science: Shaping Tomorrow's Innovations' (February 12, 2024)

COMSATS commemorated the International Day of Women and Girls in Science by holding a Webinar titled "Women in Science: Shaping Tomorrow's Innovations " on 12th February 2024. Held in a hybrid format at the COMSATS Secretariat in Islamabad, the event brought together a diverse panel of speakers to explore the pivotal role of women in Science, Technology, Innovation, and Engineering. More than 50 participants from around the globe joined the webinar.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, delivered the opening remarks, stressing the importance of women's equal participation alongside men in addressing global challenges. Dr. Zakaria reiterated COMSATS' commitment to advocating for promoting gender equality in science, technology, and innovation worldwide. He highlighted the significance of this day as a call to action, acknowledging women's invaluable contributions to science and the ongoing journey towards gender equality in the field. Dr. Zakaria emphasized that women bring a unique perspective to scientific endeavors, adding value with diversity in thought and experience, thereby helping to build a more comprehensive understanding of complex issues.

H.E. Senator Dr. Sania Nishtar, a distinguished member of the Senate of Pakistan and recently appointed CEO of Gavi, the Vaccine Alliance, expressed appreciation to COMSATS for organizing this significant event. Dr. Sania underscored that achieving gender equality in science, technology, and innovation is not only a matter of social justice but also essential for fostering economic prosperity and sustainable development. She highlighted the evolving nature of innovation, with a broader range overlapping influences that go beyond traditional science and technology advancements, particularly pertaining to environmental and societal challenges. In this new paradigm, the socio-economic empowerment of women emerges as a crucial catalyst for driving innovation forward.

Prof. Dr. Quarraisha Abdool Karim, President of The World Academy of Sciences (TWAS), Italy, shared valuable insights gained from her three decades of research contributions that have significantly influenced the global HIV prevention efforts. She highlighted that the developing countries must maximize the potential of their Research and Innovation systems while also promoting gender equality in scientific fields. Integrating gender considerations into the Science, Technology and Innovation landscape can provide developing countries with a significant competitive edge.

Prof. Dr. Rana Dajani from Hashemite University in Jordan emphasized the importance of nurturing an inclusive environment in academia and research. She shared her experience of introducing a simple yet impactful model and activity 'We Love Reading', an inter-generational initiative, promoting healing, connection, and positive self-development through the joy of reading. Further, Dr. Dajani



highlighted that a significant imbalance in women's representation persists across various levels of the professional hierarchy, particularly in leadership roles. Despite these hurdles, women and girls have the potential to exhibit remarkable leadership to greatly contribute to addressing global challenges, from poverty alleviation to climate change.

The webinar not only honored the accomplishments of women in science but also spurred transformative action, reigniting the dedication to fostering a supportive atmosphere for women and girls in scientific disciplines. The insightful discussions underscored the necessity for ongoing endeavors and partnerships to ensure that women and girls have integral roles in shaping the future through due integration in science and innovation landscape.

COMSATS Observes Earth Day 2024 (April 29, 2024)

COMSATS participated in "Planet vs. Plastic" campaign, reaffirming its unwavering commitment to Greener Future

COMSATS and the Ministry of Climate Change and Environmental Coordination (MoCC&EC), Government of Pakistan, jointly organized an event titled "Pakistan's Roadmap for Plastic Action" to mark Earth Day 2024 on April 29, 2024. The event featured the introduction of the Pakistan National Plastic Action Partnership (NPAP), a government initiative implemented as part of the Global Plastic Action Partnership (GPAP) under the auspices of the World Economic Forum.

Held at the COMSATS Secretariat Islamabad, the participants were unanimous in emphasizing the critical need to combat plastic pollution for the well-being of both humanity and the environment.

Her Excellency Ms. Romina Khurshid Alam, Coordinator to the Prime Minister of Pakistan on Climate Change and Environmental Conservation (CC&EC), graced the occasion as the Chief Guest.



H.E. Mr. Khazar Farhadov



Amb. Dr. M. Nafees Zakaria



H. E. Ms. Romina Khurshid



Ambassadors, High Commissioners, and Diplomats from COMSATS member states and other countries in Islamabad also graced the event with their presence.

H.E. Ms. Romina emphasized Pakistan's pressing issue with plastic pollution, especially in urban areas. Owing to these daunting challenges, Pakistan has taken proactive steps, such as banning single-use plastics and polythene bags in 2019, to mitigate plastic waste generation. She stressed the importance of global cooperation in combating plastic pollution, citing initiatives like the Global Plastic Action Partnership (GPAP) led by the World Economic Forum and UNEP.

Additionally, she highlighted Government of Pakistan's commitment to climate change adaptation and mitigation through policies like the National Adaptation Plan and initiatives such as the Living Indus Initiative, Recharge Pakistan, and GLOF-II, which aim to enhance climate resilience and protect vulnerable sectors of the economy and ecosystems.





In his opening remarks, Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria underscored the necessity of a cohesive global strategy to address the issue of plastic waste, emphasizing the importance of not solely focusing on its sources. Dr. Zakaria highlighted that while enacting legislation and policy measures are commendable steps, the true challenge lies in their execution amidst resistance from pressure and interest groups. He pointed out that our planet is not only grappling with plastic-related pollution but also facing a myriad of other man-made hazards contributing to climate change and environmental degradation.

Of particular concern is the often-overlooked impact of military activities and motivated imposed wars, which have yet to be addressed in international conventions and protocols. Dr. Zakaria stressed the urgent need for initiatives and innovations, supported by scientific solutions, from advocates for our planet Earth.

Addressing the Occasion, Azerbaijan's Ambassador to Pakistan, H.E. Mr. Khazar Farhadov expressed hope that hosting COP29 in Azerbaijan will inject new momentum into climate action and international collaboration, furthering the objectives of the UNFCCC and the Paris Agreement. He underscored the importance of collective action among various stakeholders, including countries, international organizations, financial institutions, and the private sector, to deliver meaningful outcomes at COP29.

Further, Ambassador Farhadov highlighted that, under the directive of President Ilham Aliyev, Azerbaijan has designated 2024 as the "Year of Solidarity for a Green World." This reflects Azerbaijan's commitment to accelerating to accelerating environmental protection efforts and addressing climate change on a global scale, as demonstrated by its hosting of COP.

During the event, the NPAP team presented the NPAP roadmap for Plastic Action in Pakistan, that will serve as a pivotal hub for concerted action and innovative initiatives within the sector, fostering tangible and enduring outcomes. NPAP will bring together Pakistan's foremost policymakers, business figures, and civil society organizations to forge a unified approach. The program entails several key components such as crafting national action partnerships that engage the multi-stakeholder, deemed crucial for shaping a circular plastics economy and developing comprehensive roadmaps, informed by top-tier analysis, to facilitate the realization of national objectives.

The event also set a landmark by the launch of COMSATS-AGECO joint Electric Vehicle (EV) Project in Pakistan to promote emission-free transportation sector for a cleaner environment in the country. The event emphasized COMSATS' dedication to strong Climate Action and environmental conservation,





H.E. Ms. Romina Khurshid Alam



Amb. Dr. Mohammad Nafees Zakaria



Prof. Seyed Komail Tayebi



Lt. General Inam Haider



Mr. Syed Haider Shah



emphasizing its goal of promoting resilience, mitigation, and a sustainable future.

UN World Environment Day – High-Level Panel Discussion, Experts present novel ideas to address Climate Change (June 5, 2024)

COMSATS, in collaboration with the Ministry of Climate Change and Environmental Coordination, Ministry of Foreign Affairs, ECO Science Foundation, and Food Security and Agriculture Centre of Excellence (FACE), commemorated the United Nations World Environment Day by holding a High-Level Panel Discussion on 5th June 2024. Ms. Romina Khurshid Alam, Coordinator to Prime Minister on Climate Change and Environmental Coordination, was the Chief Guest.

Speaking at the occasion, the Chief Guest Ms. Romina noted that sustainable development can only be achieved through a holistic strategy that addresses the environmental, social, and economic dimensions of land degradation and environmental issues. She highlighted key measures to mitigate degradation and desertification, including pooling resources to invest in S&T, promoting R&D, supporting the efforts of scientists, building capacities of farmers' community with latest knowledge and skills to implement sustainable practices. She recounted some of the significant initiatives taken by her Government to tackle environmental challenges, including the Living Indus Initiative, and the Recharge Pakistan. The Coordinator underlined the danger posed to the Indus population by Indian relentless construction of dams on rivers allocated to the lower riparian country, Pakistan.

The Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, stated that Climate Change, poverty, food security and eliminating hunger are among the intrinsically linked critical social and ecological challenges facing the developing world. It warranted alignment of remedial measures under a coherent policy approach driven by technology-based solutions. COMSATS could play a role to assist countries, he said.

Prof. Seyed Komail Tayebi, President ECO Science Foundation, remarked that Climate Change is not a matter of choice, it is a matter of survival and thus a multipronged approach that adopts innovation and ensures effective resource management is required.

Lt. General Inam Haider, Chairman, National Disaster Management Authority (NDMA), stated that inactivity and inaction viz-a-viz climate change was not an option. He noted that Pakistan is now trying to catch up and meet the global expectations. He said NDMA is using AI and other tech tools to analyze data for disaster management locally and contributing at international forum.



Mr. Syed Haider Shah, Additional Secretary (UN), Ministry of Foreign Affairs noted that window of opportunity is fast closing to make corrective actions. He highlighted that US$100 billion commitment for climate finance to ensure the implementation of climate change actions by developing countries and mitigate the climate change impacts is yet to realize. He proposed enhanced global cooperation, provision of adequate financial support and coordination with stakeholders for balanced adaptation and mitigation of environmental degradation.

A high-level panel discussion was subsequently held. The panelists included Dr. Kemal Güneş, Senior Chief Researcher, Vice President of TÜBİTAK MAM, Türkiye; Ms. Aban Marker Kabraji, Senior Advisor Climate Change and Biodiversity, United Nations Development Cooperation Office (UNDCO); Mr. Bilal Anwar, CEO, National Disaster Risk Management Fund (NDMRF); Cdre (Retd) Baber Bilal, Vice President, National Institute of Maritime Affairs (NIMA); and Dr. Sohail Malik, Technical Team Leader, Climate Resourcing Coordination Centre (CRCC). The panel discussion was held around the topics, restoring large-scale ecosystem, natural capital accounting, channeling financial investment into economic activities enhancing ecosystem assets, addressing the issues of water scarcity and sustainability, integrated land and water management, technology-driven nature-based solutions in promoting sustainable development, role of private sector, and Pakistan's Living Indus Initiative (LII) as one of the seven UN World Restoration Flagship programmes.

The event was attended by about eighty participants, including Ambassadors and diplomats from Azerbaijan, Egypt, Iran, Jordan, Kazakhstan, Morocco, Syria.

The event helped raise awareness regarding the significance of environmental protection and paved the way for collaboration among various stakeholders in order to develop S&T-based solutions for environmental challenges.



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PARTICIPATION IN IMPORTANT FORA AND MEETINGS

Events and organizational meetings of partner and potential partner organizations are utilized as means for aiding efforts for joint work on regional and international development. Based on commonalities of mandates with partner organizations, reciprocal representation in statutory meetings and capacity-building events are encouraged as good networking opportunity. These help garner mutual support, explore avenues of cooperation, and start and foster joint initiatives.



Ambassador Dr. Mohammad Nafees Zakaria, Executive Director COMSATS, participating alongside other distinguished guests in the Symposium on "Enhancing Water Security, Biodiversity, and Peace through Innovation and Earth Observation" held during COP29 in Baku

COMSATS at COP29

COMSATS, as an accredited observer IGO of the UNFCCC, participated in COP29, held from 11-22 November 2024 in Baku, Azerbaijan. Demonstrating its commitment to addressing climate change challenges and supporting its Member States, COMSATS undertook extensive preparations, collaborating with partner organizations to organize several impactful sideline events. These events focused on critical themes such as climate finance, adaptation strategies, disaster risk management, carbon markets, renewable energy and the role of innovative technologies in fostering resilience and sustainability, particularly for developing countries.



ED COMSATS, Amb. Dr. Mohammad Nafees Zakaria, Ms. Romina Khurshid Alam, Coordinator to the Prime Minister on Climate Change, and Dr. Mehwish Durani (Additional Director, IPO & Head, CCCS) at COP29, Baku

With climate change disproportionately affecting vulnerable regions, including COMSATS Member States, the sideline events highlighted cutting-edge technological advancements to accelerate adaptation and build resilience across sectors. Discussions emphasized scaling these solutions to benefit stakeholders, policymakers, and at-risk communities through multidisciplinary collaboration.

A key focus was on challenges faced by developing countries in accessing climate finance. Panelists explored the balance between adaptation and mitigation funding and emerging finance models that cater to vulnerable nations. Recommendations included strengthening technical and institutional capacities for more effective climate finance management.

Another high-level dialogue examined carbon trading as a sustainable development model for the Global South. Experts discussed opportunities in emissions trading and carbon offset projects, highlighting their potential for



COP29-President, H.E. Mr. Mukhtar Babayev addressing at the Opening Ceremony of COP29, Baku, Azerbaijan

low-carbon transitions in LDCs and SIDS.

COMSATS also addressed the integration of disaster risk insurance into national development planning. Policymakers, researchers, and finance experts shared insights into fiscal tools, social protection policies, and best practices for enhancing community resilience through disaster risk management frameworks.

Another sideline event spotlighted the intersection of climate change and antimicrobial resistance (AMR), raising awareness about the disproportionate AMR burden in the Global South. Participants called for stronger global governance to tackle these intertwined challenges.

COMSATS' participation at COP29 reinforced its dedication to addressing multifaceted climate challenges by engaging global experts, fostering cross-sectoral dialogue, sharing best practices, and providing actionable recommendations to support developing countries in navigating the climate crisis.

This year, a four-member delegation from the COMSATS Secretariat participated in COP29, held in November 2024 in Baku, Azerbaijan. Delegation leader, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, was assisted by Dr. Mehwish Durani (Additional Director, International Partner Organizations & Head, CCCS), and Dr. Huma Balouch (Deputy Director, International Partner Organizations). Mr. Saifullah Khan Dilazak (Program Officer, CCCS) was also part of the COMSATS delegation.

The key objectives of COMSATS' participation were:

i. To enhance cooperation and collaborations with international stakeholders for climate action and sustainable development.
ii. To showcase COMSATS' initiatives and achievements through sideline events.
iii. To promote the exchange of ideas, knowledge, and expertise for climate mitigation and adaptation in the Global South.

Opening of COP29, Baku, Azerbaijan

The COP29 climate summit officially began on November 11, 2024, in Baku, Azerbaijan, with an urgent appeal to raise climate finance targets to address the escalating impacts of climate change.

"We are on a road to ruin. These are not future challenges—climate change is already here… We need much more from all of you," declared COP29 President, H.E. Mr. Mukhtar Babayev in his opening address.

The inaugural session featured remarks from notable leaders, including H.E. Sultan Ahmed Al-Jaber, COP28 President and UAE Minister of Industry and Advanced Technology, alongside UNFCCC Executive Secretary Mr. Simon Stiell. The Summit convenes global leaders to tackle pressing climate priorities, particularly the need to scale up climate finance. The speakers emphasized the critical role of international collaboration in building a sustainable and resilient future. They called for increased financial support to bolster efforts in emissions reduction and adaptation to the intensifying consequences of climate change.

"COP29 represents a defining moment for the Paris Agreement. It will test our collective resolve to uphold the multilateral



climate agenda. Now is the time to prove we can achieve the targets we have set," H. E. Mr. Babayev asserted.

H. E. Sultan Al-Jaber highlighted the necessity of accessible financing for developing nations and advocated for unity amidst global challenges. "We must show once again that we can unite, act, and deliver. Let actions speak louder than words," he urged.

Mr. Simon Stiell, the UNFCCC Executive Secretary, stressed the importance of setting a new global climate finance goal, warning of severe consequences if nations fail to act decisively. "Climate finance is not charity—it is in every nation's best interest, including those with the greatest wealth," he remarked.

Mr. Stiell further called for reforms in the global financial system to provide countries with the fiscal space required for effective climate action. "We cannot leave Baku without meaningful progress," he concluded.

Following the opening ceremony, H.E. Mr. Mukhtar Babayev and Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, had a brief meeting where they exchanged congratulations on the successful commencement of COP29 and extended their best wishes.

High-level Meetings with Participating Delegates and Notables

Meeting of the Executive Director COMSATS with the International Delegates:

At the opening day of COP29, Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, held meetings with the following international delegates:

Bangladesh
- Mr. Fazle Rabbi Sadeque Ahmed, Deputy Managing Director, Palli Karma-Sahayak Foundation

Burundi
- Ir. Prosper Dodiko, Minister for Environment, Agriculture, and Livestock

Colombia
- Mr. Luis Fernando Cuartas Ayala, Ambassador of Colombia to Azerbaijan

Gambia
- H.E. Mrs. Rohey John Manjang, Minister for Environment, Climate Change, and Natural Resources
- H.E. Pa Musa Jobarteh, Ambassador of the Gambia to Belgium and the European Union

Jamaica
- Mr. Omar Y. Alcock, Senior Technical Officer (Mitigation), Ministry of Economic Growth and Job Creation

Kyrgyz Republic
- Mr. Maskat Madalbekov, Consul, Embassy of the Kyrgyz Republic in Baku

North Macedonia
- Mr. Nikola Gjorgon, Advisor, Foreign Affairs Department, Cabinet of North Macedonia

Senegal
- Prof. Amsatou Sow Sidibe, President



of Senegalese Human Rights Commission

Sri Lanka
- Mr. Leel Randeni, Director Climate Change, Ministry of Environment
- Mr. B.K. Prabath Chandrakeerthi, Secretary, Ministry of Environment
- Dr. Sunimal Jayathunga, Additional Secretary, Ministry of Environment

Sudan
- Mr. Mustafa Abdelhaleem Mahmoud, Charge d' Affaires, Embassy of Sudan in Baku

Turkiye
- Ms. Fatma Varank, Deputy Minister for Environment, Urbanization, and Climate Change
- Ms. Aysin Turpanci, Head of Department of Climate Negotiation and International Policies

Morocco
- Mr. Karim Slimani, Technical Advisor – Climate Change Cities and Regions, Ministry of Interior

Climate Vulnerable Forum (CVF) & Vulnerability Twenty Group (V20)
- H.E. Mohamed Nasheed, Secretary General

FAIR
- Mr. Zitouni Ould-Dada, Senior Advisor

FAO
- Mr. Kaveh Zahedi, Director, Office of Climate Change, Biodiversity, and Environment (OCB)

Four Paws – Animal Welfare Worldwide
- Dr. Carolina Nascimento, Expert Farm Animal Welfare
- Ms. Clara Schubert, DVM, Farm Animals Policy Officer

Global Green Growth Institute (GGGI)
- Mr. Kyung Nam Shin, Assistant Director General, Republic of Korea

Islamic Development Bank (IsDB)
- Syed Husain Qadri, Director, Resilience and Climate Action Department
- Mr. Salah Mansour, Principal Executive Assistant, Executive Office of the President
- Mr. Yusuf Olatunji, Lead Climate Change Specialist (Adaptation)

Sina
- Xinran Li, Senior ESG Content Operator

The Commonwealth
- Sarthak Roy, Assistant Research Officer

Meeting of the Executive Director COMSATS with the Director-General, ICESCO

The COMSATS delegation, led by Ambassador Dr. Mohammad Nafees Zakaria, visited the Pavilions Zone. Ambassador Zakaria was warmly welcomed by H.E. Mr. Salim M. AlMalik, Director General of ICESCO, at ICESCO's Pavilion. The Director General commended COMSATS and expressed his pleasure in hosting joint upcoming events at the ICESCO Pavilion during COP29. The discussions also focused on future collaborative activities, underscoring the strong and enduring ties between COMSATS and ICESCO.



Director General of ICESCO, Mr. Salim M. AlMalik, and Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, during their meeting at the ICESCO Pavilion, COP29, Baku



Executive Director COMSATS, Amb. Dr. Zakaria, receives Somali delegation from the Ministry of Communication and Technology and the National Communications Authority



Interaction with Senior Climate Change Expert, IsDB

The Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, held a meeting with Dr. Yusuf Olatunji, Senior Climate Change Specialist within the Global Practice Directorate of the Islamic Development Bank (IsDB) Group. During the meeting, Ambassador Zakaria shared that COMSATS is in the process of developing an action plan for 2025 and expressed interest in receiving Dr. Olatunji's valuable input. Dr. Olatunji welcomed the opportunity and assured his continued support for COMSATS in the future.

World Leaders Climate Action Summit

The World Leaders Climate Action Summit on 12th November was attended by the Executive Director COMSATS and Head CCCS. The opening of the World Leaders Climate Action Summit featured remarks from Azerbaijan's President Ilham Aliyev, UN Secretary-General, Mr. António Guterres, and Ms. Maimunah Mohd Sharif, former Executive Director of UN-Habitat. Mr. Guterres stressed the urgency for immediate emission reductions and increased climate finance, warning that 2024 could be the hottest year on record. He highlighted the injustice of wealthy nations causing climate harm while poor countries bear the brunt.



President of COP29, H.E. Mr. Mukhtar Babayev, and Executive Director COMSATS, Ambassador Dr. Nafees Zakaria, at the COP29 Opening Ceremony in Baku, Azerbaijan



In his speech at the opening of the World Leaders Climate Action Summit, President Ilham Aliyev expressed gratitude for the support Azerbaijan received from UN Secretary-General António Guterres and the UAE. He emphasized Azerbaijan's role as a bridge between East and West and its achievements despite historical challenges. He also highlighted the country's green energy initiatives, including plans for significant renewable energy projects and energy export solutions.

President Aliyev responded to criticisms of Azerbaijan's oil and gas resources, underscoring the country's commitment to the green transition while emphasizing the importance of energy security and global cooperation.

Executive Director COMSATS address on "Youth for Climate Action: Perspectives on Climate Change from the MENA Region"

November 12, 2024. On the second day of the COP29, ED COMSATS, Amb. Zakaria, delivered opening address on "Youth for Climate Action: Perspectives on Climate Change from the MENA Region", at the GORD MENA Pavilion, in Blue Zone. Event was aimed at emphasizing the tremendous potential of Youth in driving environmental protection initiatives.

Ambassador Zakaria underscored the pivotal role of youth in leading climate initiatives. He further highlighted the urgent issue of water scarcity, particularly in the MENA region, offering insights on water stress and management challenges in COMSATS member states such as Morocco, Palestine, Syria, and Yemen.

ED COMSATS commended the contributions of young climate activists, particularly Ms. Emaan Danish Khan, for their dedication to climate action. He also emphasized the importance of supporting youth in tackling water scarcity and encouraged them to propose innovative solutions for climate change and sustainable development.





Meeting of Executive Director COMSATS with the Secretary-General, Commonwealth Secretariat

During the second day of COP29, Executive Director of COMSATS, Ambassador Dr. M. Nafees Zakaria, held a productive meeting with Rt Hon Patricia Janet Scotland KC, Secretary General of the Commonwealth. The two IGO heads discussed collaboration and explored a joint action plan for 2025, focusing on strengthening cooperation between their organizations.



Roundtable Conference on Climate Finance, Hosted by MoCC&EC, Government of Pakistan

Pakistan hosted a Roundtable Conference on Climate Finance during COP29 on November 12, 2024. The event featured participation from H.E. Muhammad Shehbaz Sharif, Prime Minister of Pakistan, Ms. Romina Khurshid Alam, Coordinator to the Prime Minister on Climate Change, and Senator Sherry Rehman. Ambassador Dr. Zakaria, Executive Director of COMSATS, participated in the roundtable and provided valuable insights for the Prime Minister's speech ahead of the event. The meeting focused on advancing climate finance solutions and strengthening Pakistan's efforts in addressing climate challenges.



Meeting of ED COMSATS with the Secretary-General, Economic Cooperation Organization (ECO)

At COP29, Ambassador Dr. Mohammad Nafees Zakaria met with Ambassador Dr.



ED COMSATS, Amb. Zakaria and Secretary General, ECO, Amb. Dr. Asad Majeed Khan



Asad Majeed Khan, Secretary General of the Economic Cooperation Organization (ECO). Both diplomats reaffirmed their commitment to strengthening collaboration between COMSATS and ECO to advance Science and Climate Diplomacy. During the meeting, Dr. Zakaria briefed the ECO Secretary General about a sideline event being organized with the ECO Science Foundation on "Decarbonizing Road Transport,", held at ICESCO's Pavilion on 20th November 2024.

Executive Director COMSATS participation in the Leader's Summit of the Small Islands Developing States (SIDS) on Climate Change

Ambassador Dr. Mohammad Nafees Zakaria was invited by the Secretary General Commonwealth of Nations to the High-Level Summit on Small Island Development Sates. The summit was chaired by Rt Hon Patricia Scotland KC, Secretary-General of the Commonwealth, with notable attendees including H.E. Mr. Ilham Aliyev, President of Azerbaijan, and Mr. António Guterres, UN Secretary-General. Other distinguished speakers included H.E. Mr. Mukhtar Babayev, COP29 President, and leaders such as H.E. Dr. Mohamed Muizzu, President of the Maldives, and H.E. Mr. Dickon Mitchell, Prime Minister of Grenada, among others from SIDS across the Caribbean and Pacific. Their discussions focused on the urgent need for climate finance and the Loss and Damage Fund.
At the Leaders' Summit of the Small Island Developing States (SIDS) on Climate Change, key leaders emphasized the urgent need for increased financial support to small island nations, which are disproportionately impacted by climate change. Despite contributing minimally to global emissions, these nations face devastating impacts from extreme weather events, which threaten their development and exacerbate debt burdens. The call for the effective implementation of the Loss and Damage Fund and the urgent reform of the international financial system were central themes, with leaders advocating for more accessible and sustained climate finance for vulnerable countries.

Baku Television Interview - Executive Director COMSATS

Ambassador Zakaria congratulated Azerbaijani government at the successful organizing COP29 and at the overwhelming global participation. He expressed hope for COP30 to be held in Brazil next year and emphasized the need for international stakeholders to reform climate finance mechanisms. Dr. Zakaria stressed that these mechanisms should be made more simpler, particularly for developing nations, which are the most vulnerable to the impacts of climate change.

Executive Director COMSATS Meeting with the Member of the Technical Advisory Committee (TAC) of COMSATS

The Executive Director, Dr. Zakaria, met Dr. Juad El Kharraz, Advisor at ECCO and TAC member, at the Morocco Pavilion. They discussed preparations for the 3rd TAC meeting, and for developing COMSATS' mid-term strategic plan. Dr. Kharraz expressed interest in collaborating with COMSATS on renewable energy initiatives.

Executive Director receives the Somalian Delegates

At the ICESCO's pavilion, the Executive Director Ambassador Dr. Zakaria received delegation from Somalia, comprising Ms. Jamila Adawe and Engineer Naima Hassan, representing Somalia's Ministry of Communication and Technology and the National Communications Authority. Ambassador Zakaria reassured Somalia of COMSATS' support in advancing Science and Technology-based research and education. He also discussed opportunities for scholarships at COMSATS' Centres of Excellence and highlighted COMSATS' Telehealth initiative, which aims to replicate successful primary healthcare interventions in member states, starting with service to people in hard to reach





areas of Pakistan.

COMSATS Delegate Meeting with the Deputy Director, Climate and Environment Division, FAO

Dr. Zitouni Ould-Dada is currently Deputy Director in the Climate and Environment Division at the Food and Agriculture Organization (FAO). A two-member delegation of COMSATS i.e. Dr. Mehwish Durani and Dr. Huma Balouch had meeting with Dr. Ould-Dada. It is important to mention here that Dr. Ould-Dada was engaged with COMSATS several times. The discussion centered around future collaboration of FAO with COMSATS and Joint activities on food security and precision agriculture.

Executive Director's Meeting with the Hon. Justice, Lahore High Court, Pakistan

On the sidelines of the COP29, ED COMSATS, Ambassador Dr. M. Nafees Zakaria met with the Honorable Justice Jawad Hassan, Judge, Lahore High Court. Their meeting focused on leveraging climate justice to promote inclusivity for sustainable development and environmental stewardship, thereby leaving no one behind. Justice Hassan shared his contributions on climate litigation and presented his publication on Climate Justice and expressed his interest to work with COMSATS to promote Climate Justice and invited COMSATS for visit to Lahore High Court.

COMSATS Delegate's Meeting with the Policy Advisor, Carbon Markets Watch

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, along with his team, held a meeting with Ms. Isa Mulder from Carbon Market Watch. Ms. Mulder is a Research Analyst with extensive knowledge of global carbon market. The meeting focused on exploring opportunities to leverage resources for climate finance. Ambassador Zakaria expressed his interest in learning the carbon market mechanism for awareness of COMSATS member states. He also highlighted the COMSATS Electric Vehicle Initiative, which would significantly contribute in CO_2 emission reduction and earning the carbon credits.

COMSATS Sideline Events

Panel Discussion on Global Youth Leadership in Climate Action

November 13, 2024. COMSATS inaugurated its sideline events at COP29 with a dynamic panel discussion titled "Global Youth Leadership in Climate Action." The event was organized in collaboration with Pakistan's Ministry of Climate Change and Environmental Coordination (MoCC&EC), the event took place at the Pakistan Pavilion in the Blue Zone.

The panel discussion featured opening remarks by H.E. Ms. Romina Khurshid








Alam, Coordinator to the Prime Minister on Climate Change, followed by an address by Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS.

The event brought together young climate leaders from across the globe, including Benin, Chile, India, Jordan, Liberia, Pakistan, and the United Kingdom, showcasing innovative perspectives on climate action through diverse cultural and regional lenses. The panel session was co-moderated by Ms. Emaan Danish Khan, Pakistan's youngest climate actionist and eco-preneur, and Mr. Genaro Matías Godoy, Youth Negotiator for COP29 from Chile.

Notable contributions were made by panelists, Mr. Dossiya Dakou (Benin), Ms. Gunjan Nanda (India), Mr. Ghazi Sharqawi (Jordan), Mr. Peace M. Karnkeh (Liberia), and Ms. Serena B. (UK). Moreover, the young representatives from the HEY Campaign, Plant for the Planet, Care about Climate, and the Youth for Climate were also present in the second round of panel discussion.

Speaking on the occasion, H.E. Ms. Romina emphasized that the South Asian region, home to a vibrant, diverse, and rapidly expanding youth population, represents a powerful catalyst for accelerating climate action and achieving sustainable development goals. She further stated that addressing climate crises requires a holistic and broader approach, along with innovative solutions, and called for leveraging the creativity, energy, determination, and momentum of young people to drive meaningful environmental protection efforts.

Ambassador Dr. Zakaria emphasized the urgent need for inclusive and decisive climate action, highlighting the significant role of the youth, particularly in the Global South, where 850 million young people reside in COMSATS' 27 member states. He underlined that these digitally savvy and innovative young minds can be catalysts for social growth, economic prosperity, and environmental protection if equipped with the necessary skills, knowledge, and opportunities. Citing the devastating impacts of climate change, including floods, hurricanes, and wildfires worldwide, he called for immediate action beyond pledges.



COMSATS, through its network of 25 S&T and R&D Centres of Excellence, is committed to supporting youth through joint research, knowledge sharing, technology transfer, and capacity-building initiatives, ensuring they are empowered to lead meaningful climate action. COMSATS, in collaboration with its international partners, Focal Points, and Centres of Excellence, has organized 13 sideline events during COP29 at the pavilions of UNFCCC, Pakistan, and Islamic World Educational, Scientific and Cultural Organization (ICESCO). Additionally, the COMSATS delegation, led by its Executive Director, Ambassador Zakaria, is representing the Commission in its capacity as an observer Intergovernmental Organization of the UNFCCC. Alongside hosting the sideline events, Ambassador Zakaria was engaged with foreign delegates in Baku to promote and advance COMSATS' agenda of fostering science and technology in the Global South for sustainable development through South-South and triangular cooperation.



Global Climate Finance Mechanisms: Assessing Equity and Effectiveness

14th November 2024. On Day Four of COP29 in Baku, Azerbaijan, focusing on Finance, Investment, and Trade, COMSATS held its second sideline event, titled "Global Climate Finance Mechanisms: Assessing Equity and Effectiveness".

The event was organized in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), the National Disaster Management Authority (NDMA), the National Disaster Risk Management Fund (NDRMF), the Food Security and Agriculture Centre of Excellence (FACE), and the Climate Resourcing Coordination Center (CRCC) from the ICESCO Pavilion in Baku Stadium.

In his remarks, Ambassador Zakaria simplifying the financing mechanisms, address monopolistic tendencies, enable regional developing and under developed states such as small island developing states and least developed countries to have easier access to the climate adaptation funds. He emphasized that developing countries face hurdles such as limited bankable financial infrastructure and insufficient capacity for the efficient flow of climate finance.

The panelists for this high-priority discussion included Mr. Javier Manzanares, CEO of Allen Manza Inc.; Mr. Ben Vickers, Senior Specialist at the Green Climate Fund; Mr. Amr Sobhy, Senior Climate Change Expert at IsDB;







YBRS TS. Shamsul Bahar, Group CEO of MGTC Malaysia; Lt. Gen. Inam Haider Malik, Chairman of NDMA; Mr. Bilal Anwar, CEO of NDRMF; and Dr. Sohail Malik, Technical Team Leader at CRCC.

The discussion aimed to identify key elements for developing robust domestic regulatory frameworks to ensure the stability, integrity, and alignment of climate finance with the specific needs and policies of individual countries. Critical challenges, such as regulatory gaps, capacity-building needs, and ensuring transparency in climate finance mechanisms, were also addressed.

Additionally, COMSATS collaborated with ICESCO for another panel discussion on "Optimizing Small-Scale Renewable Energy Projects and Navigating their Finance," held from the ICESCO Pavilion at Baku Stadium. During this session, the Executive Director of COMSATS delivered an address on financing mechanisms for large-scale renewable energy projects. In his inaugural remarks, Ambassador Zakaria shared his insights on the challenges posed by non-renewable energy and emphasized the urgent need to adopt clean and green energy solutions across domestic, commercial, and transportation sectors. He informed the participants about COMSATS' initiatives in this regard, including a collaborative effort to develop indigenous technology for converting internal combustion engine (ICE) vehicles into electric vehicles (EVs).

Both events were closely aligned with the agenda and theme of Day Four, focusing on Finance, Investments, and Trade to promote Climate Action and achieve sustainable development, thereby paving the way for a resilient and prosperous future.

Enhancing Multi-Stakeholder Collaboration for Advancing Emerging Energy Technologies

November 15, 2024. On the fifth day of COP29, COMSATS reaffirmed its commitment to advancing sustainable energy solutions by hosting a sideline event in partnership with the Islamic World Educational, Scientific, and Cultural Organization (ICESCO), Morocco.

The event, titled "Enhancing Multi-Stakeholder Collaboration for Advancing Emerging Energy Technologies," was held at the ICESCO pavilion. It featured a panel discussion organized in collaboration with COMSATS' Center of Excellence in Türkiye, the Scientific and Technological Research Council of Türkiye (TÜBİTAK); ECCO Think Tank, Italy; and the Food Security and Agriculture Centre of Excellence (FACE), a COMSATS partner from Pakistan.

Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, opened the session by emphasizing the urgency of transitioning to clean energy technologies. He highlighted the ongoing global reliance on fossil fuels, the often-overlooked contributions of military



activities to carbon emissions, and the potential of mechanisms like carbon credits to support a sustainable energy transition.

Prof. Dr. Raheel Qamar, Head of the Science and Environment Sector at ICESCO, provided insights into the opportunities and challenges of renewable









energy. He pointed out limitations associated with photovoltaic systems, such as their short operational lifespan and potential to exacerbate local temperatures in regions like the Sahara. Dr. Qamar advocated for prioritizing more efficient energy sources, including geothermal and ocean wave technologies, over traditional renewables like solar and wind.

The discussion, moderated by Dr. Jauad El Kharraz, Advisor at ECCO Think Tank, convened an esteemed panel of experts, including: Mr. Hongpeng Liu, Director of Energy Division, UNESCAP; Mr. Mehmet Aslan, Director of TEYDEB, TÜBİTAK; Mr. Lincoln Teo, Founder of iWise; Dr. Baber Majid, CEO, National Information Technology Board (NITB), Pakistan. Panelists delved into pressing topics, such as fostering regional cooperation for advancing emerging energy technologies, overcoming barriers to market adoption of innovative solutions, and addressing the socio-economic implications of renewable energy transitions.

Dr. El Kharraz underscored the need for a just transition that equitably distributes the benefits and burdens of renewable energy projects, particularly for vulnerable populations. Mr. Liu stressed the importance of aligning policies across diverse economies to drive regional energy collaboration. Mr. Aslan explored strategies to mitigate infrastructure and cost barriers, while Dr. Baber Majid highlighted the role of industrial IoT and behavioral insights in accelerating decarbonization. Mr. Teo emphasized the need to foster public trust and acceptance to ensure the long-term success of emerging energy technologies.

The event concluded with a strong call for enhanced multi-stakeholder partnerships, cohesive policies, and innovative strategies to support the equitable adoption of sustainable energy technologies globally.

Panel Discussion on "Economic Impacts of Climate Change on Agriculture: Predictive Modeling Insights"

16th November 2024. On the sixth day of COP29, COMSATS, in collaboration with Islamic World Educational, Scientific, and Cultural Organization (ICESCO), Food Security and Agriculture Centre of Excellence (FACE) – Fauji Fertilizer Company (FFC), International Center for Agricultural Research in the Dry Areas (ICARDA), Living Indus, and the Islamic Organization for Food Security (IOFS), successfully organized a sideline event





titled "Economic Impacts of Climate Change on Agriculture: Predictive Modeling Insights." The event was held at the ICESCO Pavilion and brought together leading experts, policymakers, and stakeholders to address one of the most pressing challenges of our time—how climate change is reshaping agricultural systems and impacting food security globally.

The session, moderated by renowned agriculture and sustainability expert, Dr. Minhaj Khokhar, CEO PK2100, focused on predictive modeling and its role in understanding the economic impacts of climate change on agriculture, while also exploring solutions to enhance the resilience of agricultural systems in the face of unpredictable climatic events.

In his opening remarks, Ambassador Dr. Mohammad Nafees Zakaria, Executive Director of COMSATS, underscored the critical importance of rethinking agricultural strategies in the context of climate change. He noted: "The phenomenon of climate change is not new—it has been observed for centuries. However, its intensity and scale of devastation have increased exponentially in recent years. The Green Revolution addressed the food security challenges of a growing population but came at the cost of soil and land degradation. It is now imperative that we adopt methodologies and technologies that are environmentally





friendly and sustainable."

Prof. Raheel Qamar, Head of the Science and Technology Sector at ICESCO, highlighted the unpredictability of extreme weather events and their devastating impact on agriculture. He remarked: "We have seen firsthand how, within a span of just two years, same area in Kenya experienced both severe drought and devastating floods, crippling agricultural productivity. Remote sensing and predictive modeling can identify areas suitable for agricultural growth and productivity. It is unfortunate that developing countries, which contribute the least to climate change, are bearing its worst impacts."

Col. Salar Malik, Chief Sustainability Officer at Fauji Fertilizer Company Energy (FACE-FFC), shared insights from FFC's pioneering work in predictive modeling for sustainable agriculture: "At FACE-FFC, we are leveraging predictive models to support farmers by identifying problems such as pest attacks or locust infestations. These tools empower farmers to make informed decisions. As a fertilizer company, we are committed to playing our role in mitigating the economic impacts of climate change on agriculture."

The panelists responded to critical questions addressing the economic and environmental challenges posed by climate change to agriculture, focusing on strategies to enhance resilience, improve productivity, and ensure food security globally.

Dr. Nangia Nangia, Director Research Programs (ICARDA) shed light on the vicious cycle between agriculture and climate change, emphasizing the dual role agriculture plays as both a contributor to and victim of climate change. He highlighted the transformative potential of





predictive modeling and machine learning technologies to address this dynamic. "Predictive modeling can identify patterns of resource usage, climate variability, and yield fluctuations to guide agricultural practices and policy decisions. By analyzing complex interactions between climate variables and agricultural outputs, these tools can help optimize resource use and mitigate economic losses for farmers. This technology is key to advancing sustainable agricultural systems, especially in regions facing extreme climate variability."

Addressing barriers to technology adoption in agriculture, YBRS TS. Shamsul Bahar Mohd Nor, Group Chief Executive Officer, Malaysia Green Technology Company (MTGC), pointed out the challenges of the digital divide, high costs, and technological complexity in developing countries. "For predictive modeling and advanced technologies to benefit agriculture in developing nations, accessibility and affordability are paramount. Governments and private sector stakeholders must work together to bridge the digital divide through investments in infrastructure and capacity-building programs. Additionally, strategies like public-private partnerships, subsidized access to technologies, and promoting climate-tech entrepreneurship can help overcome financial and technical barriers". Dr. Abdelaziz Hajjaji, Programme Manager (IOFS) emphasized the critical role of intergovernmental organizations in addressing diverse regional challenges and facilitating the adoption of climate-resilient technologies across member states.

"The IOFS plays a pivotal role in fostering collaboration among member states to implement tailored climate-smart agricultural strategies. By sharing best practices, providing technical assistance, and facilitating access to funding for climate-resilient technologies, IOFS helping nations address their unique agricultural challenges while collectively contributing to global food security."

Focusing on the importance of soil health and carbon sequestration, Dr. Khokhar elaborated on how predictive modeling can identify the most effective methods for integrating climate-resilient crops with regenerative agricultural practices.

"Predictive modeling offers insights into optimizing crop selection, rotation, and regenerative practices that improve soil health and enhance carbon sequestration. These integrated practices not only reduce greenhouse gas emissions but also strengthen the economic resilience of agricultural systems by ensuring long-term sustainability of farmland and mitigating risks associated with climate variability." The panelists collectively emphasized the urgent need for collaborative efforts between governments, research organizations, and private sectors to integrate advanced technologies into



agricultural systems. They highlighted the importance of capacity-building, knowledge-sharing, and funding mechanisms to ensure that predictive modeling and climate-resilient practices reach the farmers who need them most.

The discussion reinforced the message that addressing the economic impacts of climate change on agriculture requires a multi-dimensional approach—leveraging innovation while promoting inclusivity and sustainability in agricultural practices.

High-level Dialogue on Strengthening governance frameworks for Carbon Markets in Global South

In a significant step toward active participation in international carbon markets, Pakistan marked November 16, 2024, as "Carbon Market Day" at the Pakistan Pavilion during COP29. In this regard, COMSATS and the Ministry of Climate Change and Environmental Coordination (MoCC&EC) jointly organized high-profile two Panel Sessions, "High-level Dialogue on Strengthening governance frameworks for Carbon Markets in Global South" on 16th November during COP29. The panel discussion was part of the event at Pakistan's Pavilion to unveil the nation's Carbon Market Policy Guidelines and chart a course for future engagement.

Two prominent panel discussions held during COP29 delved deeply into the opportunities and strategies for developing Pakistan's carbon market while ensuring alignment with the goals of the Paris Agreement. These sessions brought together distinguished experts and thought leaders from across the globe to share their experiences, provide strategic insights, and chart a path forward for Pakistan in the evolving landscape of carbon markets.

The first panel, moderated by Mr. Khurram Lalani, focused on identifying the key opportunities and challenges for Pakistan as it embarks on its journey toward establishing a robust carbon market. Ms. Mirey Atallah, Branch Chief at UNEP's Climate Change Division and a senior figure in global climate policymaking, commended Pakistan for the significant progress marked by the unveiling of its Carbon Market Policy. Highlighting the complexities of implementation, she emphasized that the real work begins now and assured UNEP's continued support to Pakistan's Ministry of Climate Change and Environmental Coordination (MoCC&EC).
Ms. Riham Elgizy, CEO of the Regional Voluntary Carbon Market Company (RCVMC) in Saudi Arabia, brought insights from her pioneering work in developing voluntary carbon markets across the Middle East. She underlined the importance of transparency and integrity in establishing credibility for carbon markets. Cautioning against potential pitfalls, she advised Pakistan to carefully learn from the experiences of other nations that faced challenges during the adoption of carbon market frameworks.

Ms. Isa Mulder from Carbon Market Watch, known for her steadfast advocacy for environmental integrity, stressed the importance of ensuring that carbon trading systems deliver tangible environmental benefits. Her perspective underscored the need for stringent regulatory oversight and robust mechanisms to prevent market inefficiencies.

The second panel discussion, moderated by Mr. Mark Kenber, Executive Director of the Voluntary Carbon Markets Initiative (VCMI), centered on innovative financing strategies and the potential of Paris-aligned carbon markets to drive sustainable development in Pakistan.

Mrs. Dawa Chhoeden, Chief Engineer at Bhutan's Ministry of Energy and Natural Resources, shared Bhutan's success in leveraging carbon credits to promote renewable energy projects. Her insights highlighted the importance of tailoring carbon market policies to national priorities while maintaining flexibility to





adapt to evolving market dynamics.

Ms. Berioska Quispe, Director General of Climate Change and Desertification in Peru, detailed Peru's initiatives in generating carbon credits through forest conservation and biodiversity projects. Her presentation underscored the value of preserving natural ecosystems as critical carbon sinks.

Mr. Chandra Shekhar Sinha, Global Lead for Carbon Markets and Finance at the World Bank Group, outlined strategies for mobilizing investments into climate projects in emerging economies. Emphasizing the critical role of private sector engagement, he provided actionable recommendations for fostering investor confidence in Pakistan's carbon markets.

Mr. Amr Sobhy, Senior Climate Change Specialist at the Islamic Development Bank (IsDB), introduced the concept of sustainability bonds being launched by the IsDB. These bonds aim to provide financial support for low-carbon initiatives in member countries, offering Pakistan a new avenue for attracting development financing.

Ms. Adidjatou Hassan, President of the Benin National Carbon Projects Registration Authority, shared valuable lessons from Africa's carbon market initiatives. Highlighting the challenges and opportunities faced by nations new to carbon markets, she encouraged Pakistan to adopt an inclusive and equitable approach while building its market structures.

Romina Khurshid Alam, Coordinator to the Prime Minister on Climate Change and Environment Coordination, underscored the potential of Article 6 of the Paris Agreement as a foundation for establishing equitable and transparent carbon markets in Pakistan. Acknowledging the nation's vulnerability to climate change, she reaffirmed Pakistan's unwavering resolve to tackle these challenges and capitalize on carbon market opportunities. "Today's discussions mark an important milestone in shaping Pakistan's climate action strategy," she said. "By implementing Article 6, we can create cross-border cooperation that not only facilitates emissions reductions but also fosters sustainable development. This is a critical step toward ensuring that carbon markets contribute to both economic growth and social equity."

The panels collectively emphasized the importance of creating a unified framework for carbon market operations in Pakistan. Plans to establish a One-Window Carbon Market Facility





were unveiled, aiming to streamline transactions, enhance transparency, and support project developers. This facility will adhere to international standards of environmental integrity, ensuring that all activities align with global best practices.

Pakistan's Carbon Market Policy Guidelines reflect a strong commitment to leveraging carbon markets for climate resilience, economic growth, and social inclusion. By incorporating lessons from global leaders and fostering international collaboration, Pakistan is positioning itself as a key player in the global effort to achieve net-zero emissions.

Panel Discussion on Climate Change – Antimicrobial Resistance (AMR) Nexus

November 18, 2024. Recognizing the interlinked global challenges of Climate Change and Antimicrobial Resistance (AMR) – both independently critical and collectively forming an "alarming alliance" – COMSATS organized a panel discussion titled 'Climate Change – Antimicrobial Resistance (AMR) Nexus'.

The event, held at the ICESCO Pavilion on Day 8 of COP29 in Baku, aligned with thematic focuses on Human Development, Health, Education, and Children and Youth. It was organized in collaboration with the Islamic World Educational, Scientific and Cultural Organization (ICESCO), COMSATS Centre of Excellence in Egypt, the National Research Centre (NRC), and the Food Security and Agriculture Centre of Excellence (FACE), Pakistan.

The discussion aimed to spotlight the exacerbating impact of climate change on AMR and the dual economic risks posed by these threats, emphasizing the urgent need for global action. Moderated by Professor Dr. Ashraf Shaalan, Chairperson of the COMSATS Coordinating Council and former President of NRC Egypt, the event featured opening remarks by the Executive Director of COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, and Chief Operating Officer of FACE, Mr. Hassan Akram.

The technical session included insightful contributions from Ms. Anamaria Bejar, Director of Public Policy Engagement, Gavi, The Vaccine Alliance; Ms. Madiha



Latif, Country Director, The Pathfinder, Pakistan; and Mr. Mohsin Hafeez, Director of Food and Ecosystems, International Water Management Institute (IWMI). Panelists called for an inter-sectoral approach to address AMR, leveraging WASH (Water, Sanitation, and Hygiene) practices to minimize antibiotic misuse. They stressed a people-centric, preventive health focus and the integration of AMR into national and global climate strategies.

In his opening remarks, the Executive Director COMSATS, Ambassador Zakaria, highlighted the disproportionate burden of climate change and AMR on the Global South, describing AMR as a "silent pandemic." He urged nations to incorporate AMR strategies into climate agendas, emphasizing the need for interdisciplinary research and cross-sectoral partnerships that unite microbiology, environmental sciences, economics, and public health.

Following the opening address by the Executive Director of COMSATS, the Chief Operating Officer of FACE, Mr. Hassan Akram, underscored the critical need for a "One Health" approach. He emphasized how interconnected human, animal, and environmental health systems are vital in combating infectious diseases and AMR.

The technical session featured diverse perspectives from experts on water quality, vaccination, public health, and gender



equity. Mr. Mohsin Hafeez highlighted the alarming state of water quality in developing countries, including Pakistan. He noted that only 36% of Pakistan's population has access to safe drinking water, while poor sanitation contributes to widespread health vulnerabilities. Citing the 2022 floods, he shared how stagnant water left over one million women at heightened risk of infections and waterborne diseases. Mr. Hafeez stressed the need for multilateral collaboration, robust financial investments in AMR research, and leveraging Water, Sanitation, and Hygiene (WASH) practices to reduce antibiotic misuse.

Ms. Anamaria Bejar elaborated on Gavi's multi-sectoral efforts in collaboration with WHO and UNICEF to deliver 19 life-saving vaccines across 57 developing countries. She warned against the over-prescription of antibiotics, which exacerbates AMR, and advocated for integrating WASH, nutrition, and immunization practices into health systems to prevent infections and reduce antibiotic reliance.

Ms. Madiha Latif emphasized the dangers of siloed approaches in tackling interconnected challenges like AMR. She highlighted the disproportionately high impact of AMR on women due to biological, cultural, and socio-economic factors and advocated for prioritizing women's access to sexual and reproductive health rights (SRHR). Integrating SRHR into national strategies, she noted, would strengthen women's roles across key sectors such as agriculture, water management, and climate change.

The discussion concluded with actionable recommendations to address AMR effectively. These included leveraging key practices such as Water, Sanitation, and Hygiene (WASH), nutrition, sexual and reproductive health rights (SRHR), and immunization to reduce antibiotic use. Emphasis was placed on adopting people-centric, preventive health approaches to combat rising resistance and prioritizing interventions in vulnerable regions and identified hotspot areas. Participants also highlighted the need for robust public-private partnerships to foster inter-sectoral collaboration and deliver sustainable, cross-cutting solutions. Furthermore, the integration of AMR into the national policy frameworks of both Global North and South countries was deemed essential for comprehensive and coordinated action.

The event reflected COMSATS' steadfast commitment to promoting sustainable socio-economic development and its efforts to combat the dual burden of climate change and AMR.

Integrating Permaculture and Predictive Modeling for Climate-Resilient Agriculture

19th November 2024, Baku, Azerbaijan: On Day 9 of COP29, COMSATS organized a sideline event titled "Integrating Permaculture and Predictive Modeling for Climate-Resilient Agriculture". The event was held at the pavilion of the Islamic World Educational, Scientific, and Cultural Organization (ICESCO), with notable collaboration from the Living Indus Initiative, International Center for Agricultural Research in the Dry Areas (ICARDA), and the Food Security and Agriculture Centre of Excellence (FACE) in Pakistan. The Panel brought together experts, policymakers, and thought leaders to explore innovative solutions to one of the most pressing challenges of our time: ensuring sustainable agriculture in the face of climate change.

In his opening remarks, the Executive Director of COMSATS, Ambassador Dr. Nafees Zakaria, shared transformative examples of permaculture's potential, citing projects such as Greening the Desert in Jordan. He emphasized, "Permaculture offers a critical shift toward sustainable, resilient, and resource-efficient agriculture. It is not merely a set of techniques but a guiding philosophy that enhances biodiversity, soil health, and ecosystem





balance. With projects like these, barren landscapes have been transformed into green oases, providing a model for regions facing similar challenges globally."

Ms. Azka Abdur Rehman, Executive Sustainability and Innovation, Fauji Fertilizer Company Limited, highlighted the connectivity between permaculture and predictive modeling. In her remarks, she stated, "Permaculture represents a philosophy of resilience and regenerative agriculture, while predictive modeling brings data-driven precision to this approach. Together, they form an unparalleled combination for fostering climate-resilient agricultural practices."

Ms. Humaira Jahanzeb, Team Lead of the Living Indus Initiative, delivered a detailed presentation on securing the Indus River under the framework of the initiative. She described it as a flagship project of the UN World Restoration Flagship Programme, addressing the three planetary crises of biodiversity loss, pollution, and climate change. Her remarks emphasized the initiative's integrated approach, including partnerships with UN agencies, academic alliances, global climate finance mechanisms, and community outreach.

The panel session, moderated by Mr. Faraz Ahmed Toor, Information Management Specialist, Living Indus Initiative, featured a distinguished panel of experts who explored the intersection of permaculture and predictive modelling. Dr. Vinay Nangia, Director Research Program (ICARDA) discussed how predictive modeling and digital tools can scale permaculture practices by enhancing community engagement, reducing costs for resource-limited farmers, and ensuring economic viability. He emphasized the importance of ICARDA's conservation agriculture models in boosting resource efficiency and yield.

Mr. Faisal Syed, Project Development Technical Expert (Living Indus Initiative) shared insights on balancing social, environmental, and economic sustainability within permaculture practices, particularly in resource-scarce regions. He highlighted the role of predictive modeling in optimizing yields





while maintaining this delicate balance.

Mr. Mohsin Hafeez, Director Food and Ecosystems (IWMI) underscored the importance of integrating local ecosystem data into predictive models, noting how this synergy supports long-term sustainability and resilience in areas facing harsh climatic conditions.

Mr. Minhaj Khokhar, CEO (PK2100) discussed scaling permaculture from small farms to large operations. He shared insights from predictive modeling that reveal which aspects of permaculture adapt well to large-scale farming and which may require more nuanced approaches.

The discussions reiterated the need for holistic, interdisciplinary approaches to achieve climate-resilient agriculture. By combining the regenerative power of permaculture with the precision of predictive modeling, stakeholders can unlock solutions that are both innovative and impactful. The event concluded with a collective call to action: governments, research institutions, private sector actors, and local communities must collaborate to implement these transformative approaches. As the moderator of the event, Mr. Faraz Toor noted, "Together, we can lead a global movement toward climate-resilient agriculture, setting an example for regions grappling with similar challenges worldwide."

Symposium on Enhancing Water Security, Biodiversity, and Peace through Innovation and Earth Observation

As part of its activities at COP29 in Baku, Azerbaijan, the Islamic World Educational, Scientific and Cultural Organization (ICESCO) held an international seminar on enhancing water security, biodiversity and peace through innovation and Earth observation, in partnership with the Islamic Organization for Food Security and COMSATS. The panelists gathered to discuss the mechanisms to address water scarcity challenges through the use of technology and environmental peacebuilding. The symposium marked the launch of ICESCO's new water sustainability collaboration platform.

The symposium kicked off on Saturday (16 November 2024) with Dr. Hisham Al-Askari, Advisor to ICESCO Director General, who presented an overview of its topics and highlighted the importance of discussing this vital topic, praising the expertise and visions of the speakers, before initiating the discussion.

Answering a question about ICESCO's efforts on water security, biodiversity and peacebuilding, Dr. Salim Al-Malik, Director General of ICESCO, underlined that the Organization is leveraging the vast knowledge and cultures of Member States to address pressing challenges, noting that ICESCO's innovative platform will serve as a cooperation and knowledge exchange hub by harnessing Earth observation technologies and data analytics to monitor water resources.

Regarding ICESCO's approach to merging technology and heritage, Dr. Malik stressed that this approach is at the core of the Organization's sustainable development strategy, believing that the integration of modern technologies with the Islamic world's rich heritage will contribute to building resilience between cultural identity and future preparedness.

Ms. Romina Khurshid Alam, Coordinator to the Prime Minister of Pakistan on Climate Change, shared Pakistan's experience and government initiatives to





achieve water security. In his intervention, Ambassador Mohammad Nafees Zakaria, Executive Director of COMSATS, emphasized the importance of cooperation to achieve water security and provided examples of hostile acts throughout history that have threatened water security.

For his part, Mr. Stewart Maginnis, Deputy Director General of the International Union for Conservation of Nature, highlighted the importance of integrating solutions to conserve natural resources and employ technology in this framework; while Mr. Samaddin Asadov, Chairman of the Board of the Azerbaijan Space Agency (Azercosmos), tackled the role that satellites can play in addressing the challenges of water poverty.

Mr. Abid Qaiyum Suleri, Executive Director of Pakistan's Sustainable Development Policy Institute, emphasized the importance of adopting appropriate policies and using available technologies to support water security initiatives.
Dr. Al-Askari then outlined the key aspects of ICESCO's Water Sustainability Collaboration Data Solutions Hub, pointing out that this platform aims to bring together various stakeholders to develop innovative solutions to address water and biodiversity challenges by integrating modern technologies and environmental practices.

COMSATS, SDPI, and MoCC&EC Collaborate on Panel Discussion for Climate-Resilient Food Systems

In collaboration with the Sustainable Development Policy Institute (SDPI) and the Ministry of Climate Change and Environmental Coordination (MoCC&EC), Government of Pakistan, COMSATS co-organized a panel discussion titled "Towards More Resilient Food Systems: Sustainable Food Systems, Supply Chains, and Nutritious Food" at the Pakistan Pavilion. Experts and policymakers convened to discuss the pressing challenges and actionable strategies for fostering climate-resilient food systems in Pakistan.

The session began with Dr. Abid Qaiyum Suleri, Executive Director of SDPI, who stressed the critical role of resilient food systems in bolstering Pakistan's overall climate resilience. He highlighted the importance of empowering subnational governments, particularly local leaders, to address food security and integrate climate action into regional frameworks. Dr. Suleri underscored the untapped potential of Balochistan, with its rich coastlines and fertile plains.

Nadeem ur Rehman, Secretary of Climate Change, highlighted Pakistan's paradoxical position as one of the most climate-vulnerable nations despite contributing minimally to global emissions. He pointed out that Balochistan, while heavily affected by climate-induced disasters, offers immense agricultural potential





due to its diverse agro-ecological zones and natural resources, including river basins and irrigation systems. However, he emphasized the underutilization of arable land and discussed efforts such as the plantation of 10 million olive saplings to harness the region's agricultural capabilities.

Addressing the issue of malnutrition, Bilal Anwar, CEO of the National Disaster Risk Management Fund (NDRMF), drew attention to the 48% malnourishment rate among children in Pakistan. He emphasized the critical link between water management, food production, and disaster risk reduction, particularly in drought-prone regions like Sindh. Anwar highlighted NDRMF's commitment to integrating nutrition-focused strategies into disaster response planning.

Bilal Azhar Kayani, Member of the National Assembly and Convener of the SDGs Parliamentary Taskforce, stressed the need for stronger legislative and parliamentary advocacy to advance climate-resilient food systems. He discussed the challenges of transitioning hard-to-abate sectors, such as agriculture, toward sustainable practices and called for expert-led strategies to drive this transformation.

On an international front, Dr. Saul Morris, Director of GAIN, emphasized the importance of improving nutrition for vulnerable populations. Drawing from GAIN's work in food systems policy development in Pakistan, he discussed the impact of rising carbon emissions and heat on nutrient loss and called for robust interventions to combat these challenges.

Dr. Minhaj Khokhar, an ecosystem and food specialist, proposed innovative farming techniques such as vertical gardening, regenerative agriculture, and organic meat production to reduce reliance on chemicals and improve yields. He advocated for inclusive farming practices as a pathway to long-term food security.

Focusing on global food security challenges, Dr. Khalid Mahmood, CEO of SAWiE, emphasized the need to adopt sustainable agricultural practices to address the challenge of feeding a projected global population of 10 billion by 2050. He highlighted the potential of regenerative agriculture, particularly in Balochistan, to deliver both environmental and economic benefits to small-scale farmers.

Representing the private sector, Khurram Shah of PepsiCo shared insights on the company's initiatives in Pakistan, where they collaborate with over 30,000 farmers. He outlined PepsiCo's efforts in promoting soil health, water conservation, and resilient seed varieties to empower farmers in adopting sustainable agricultural methods.

Niaz Khan Kakar, Project Director of Upscaling Green Pakistan, emphasized the importance of preserving native plant species in Balochistan, a region known for its rich biodiversity. He cautioned against the promotion of exotic species and advocated for policies supporting ecosystem conservation.

The session concluded with Naseem ur Rehman, Advisor to the Government of Balochistan, who reiterated the province's vulnerability to climate-induced disasters despite its vast resources. He expressed gratitude for international support and reaffirmed Balochistan's commitment to climate resilience. He also emphasized the importance of global platforms like COP29 in raising awareness and fostering collaborative action.

This impactful discussion brought together key stakeholders from government, international organizations, academia, the private sector, and local communities. It underscored the need for coordinated efforts at all levels to build sustainable and climate-resilient food systems, ensuring a secure and nutritious future for Pakistan amidst the growing threats of climate change.

Decarbonizing Road Transport: Innovations and Policies for Electric and Hydrogen Vehicle Technologies

November 20, 2024. COMSATS successfully hosted a high-impact panel discussion titled "Decarbonizing Road Transport: Innovations and Policies for Electric and Hydrogen Vehicle Technologies" at COP29. The event was held at the pavilion of the Islamic World Educational, Scientific, and Cultural Organization (ICESCO), with notable collaboration from the Economic Cooperation Organization Science Foundation (ECOSF), COMSATS' Centre of Excellence in Türkiye – TÜBİTAK (Scientific and Technological Research

Council of Türkiye), and the Food Security and Agriculture Centre of Excellence (FACE) in Pakistan.

The panel addressed the pressing need to transform the transport sector, which remains a significant contributor to global greenhouse gas (GHG) emissions, focusing on technological innovation, policy frameworks, and equitable adoption pathways for electric and hydrogen vehicle technologies.

In his opening remarks, the Executive Director COMSATS, Ambassador Dr. M. Nafees Zakaria, underscored the historical roots of climate change, citing the Industrial Revolution, the Green Revolution, world wars, and advances in transportation as pivotal moments that contributed to the current state of environmental degradation. He emphasized that the decarbonization of road transport is not just a technological endeavor but also a socio-economic and health related challenge.

"Millions of individuals in developing countries face affordability barriers in transitioning to cleaner vehicles," Dr. Zakaria noted. "Addressing this inequity is vital to ensure the widespread adoption of sustainable transport solutions." He also called for stronger international oversight, proposing that organizations like the UNFCCC mandate annual reporting on member states' progress in decarbonizing their transport sectors.

The technical session, moderated by Dr. Fahman from ICESCO, featured distinguished experts: Dr. Gizem Çakmak, Chief Researcher at TÜBİTAK; Eng. Khalid Salmi, Sustainable Energy Management Expert at RCREEE; and Eng. Khalil Raza, Sustainable energy professional & Programs Manager at ECO Science Foundation.

Panelists discussed critical topics, including: the role of regulatory frameworks in reducing transport sector GHG emissions; financial mechanisms to foster the adoption of electric vehicles (EVs) in developing countries, and the potential of green hydrogen as a transformative energy source.







ED COMSATS, Amb. Dr. M. Nafees Zakaria, meeting with Hon. Justice Jawad Hassan, Judge of Lahore High Court

Eng. Salmi highlighted the economic potential of green hydrogen production in Africa, particularly in countries like Morocco and Namibia, and the need for developing nations to leverage domestic technologies to remain competitive. Dr. Çakmak addressed the persistent barriers to EV and hydrogen technology adoption, including infrastructure gaps, high costs, and limited technical expertise.

Engr. Raza called for robust policy frameworks and capacity-building initiatives. In his closing remarks, Professor Syed Komail Tayebi, President of ECOSF, emphasized that many developing nations lack the technological and financial resources to produce EVs locally, making them reliant on costly imports. "Collaboration between governments, international organizations, and private stakeholders is essential to overcome these challenges," he stated.

Dr. Zakaria reiterated COMSATS' commitment to supporting its 27 member states and 25 Centres of Excellence in advancing EV and hydrogen vehicle technologies. "COMSATS is ready to play a leading role in this global transition, combining our expertise and resources to decarbonize the transport sector," he concluded.

6

SPECIAL ASSIGNMENTS

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SPECIAL ASSIGNMENTS

For the benefit of its Member States, COMSATS undertakes special assignments, such as conducting scientific studies, undertaking pilot projects, and implementing educational programmes. Other than CUI, two of COMSATS' flagship projects, COMSATS Internet Services (CIS) and COMSATS Telehealth (CTH) continue their operations under the oversight of COMSATS Secretariat. Activities of COMSATS Centre for Climate and Sustainability (CCCS) have grown over the years and are included in this Chapter.



The Secretary-General of the Commonwealth, Rt Hon. Patricia Scotland KC; Federal Minister for Science & Technology and Education, H.E. Dr. Khalid Maqbool Siddiqui; and Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, during their visit to the Telehealth Resource Centre at CIS Technology Park

COMSATS Telehealth (CTH)

COMSATS Telehealth under Digital and Global Health

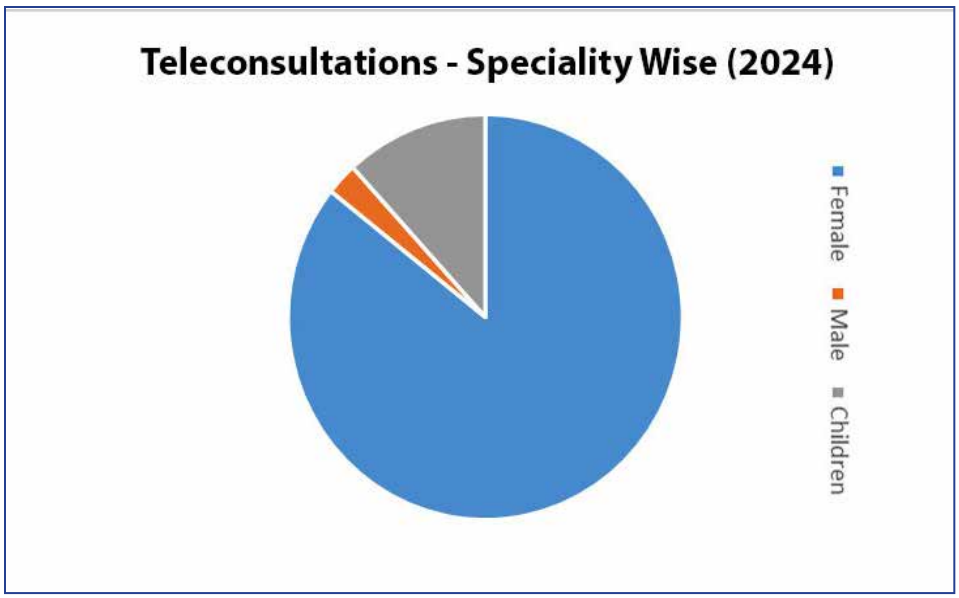
During 2024, COMSATS Telehealth underwent a progression in terms of number of clinics as well as the number of patients served through. One of the biggest landmarks for COMSATS Telehealth was the indigenous development of patient information management system developed by COMSATS Software Solutions (CSS) that has incredibly changed the dynamics of Telehealth service provided by COMSATS to the remote areas of Balochistan, Pakistan.

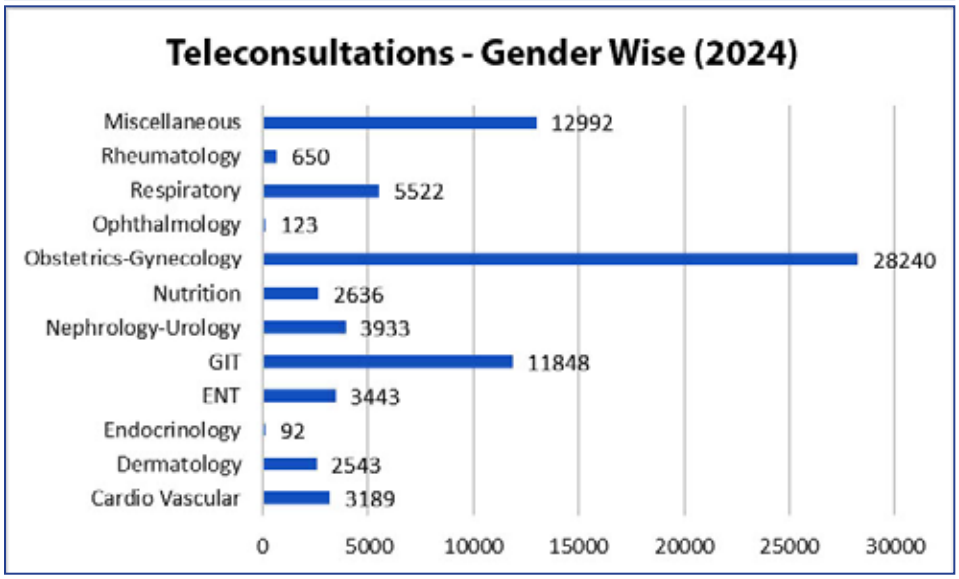
Important features of Telehealth Service in 2024

Two new Telehealth clinics were added to the list of teleclinics being served by COMSATS Telehealth program. With a centre established in BHU Haji Saifullah, Chaman and other in BHU Essachah at Noshki. This brings total number of Teleclinics to 31.



COMSATS not only believes in the quantity, but providing healthcare with quality is one of its objectives. To achieve this quality there is a standard number of clinics or patents that we cater for through a single doctor. Therefore, with the additional clinics being added and more patients seeking healthcare at COMSATS' teleclinics, the number of doctors at





COMSATS Resource Centre is also increased. New doctors joined Telehealth service during the 2024.

Maximum number of patients seen through Telehealth, during one month crossed the figure of 7500 in the month of September during 2024.

The doctors at CTH not only provide consultations to the patients but also support LHVs at the far end in their emergencies. For example, our physician and Gynecologist supervised the LHV at Bakhtiarabad, Sibbi BHU to skillfully manage the challenge posed due to patient presenting in complicated labour. With the guidance from our doctors, a healthy baby boy was delivered and handed over to the mother without any complication. The two would not have been able to make it to the tertiary care, an hour away.

Facts and Figures

With the addition of two new clinics and more people within the community learning about the telemedicine service in their respective areas, the total number of patients rose to 71,752 in comparison to 45,497 during the year 2023. This is a huge increase that implies that the confidence of the local communities is increasing on the health being provided through Telemedicine.

The female to male ratio remained high and a large number of children also benefitted from the services.

Timely referrals and identification of risk cases are two biggest benefits of Telemedicine in the rural areas. During the year 2024, around 880 cases were referred to the tertiary care while 768 were labelled as the risk cases.

The issues addressed during the year mostly revolved around the Maternal and Child health.

Obstetric and Pelvic ultrasounds are one of the biggest assets to the Telehealth services enabling the doctors to better manage the cases. More than 13,000 ultrasounds were performed online during the 2024.

Advocacy, Collaborations and Capacity Building of Digital Health

COMSATS has always advocated the utilization of Digital health with the spirit of widespread awareness of the benefits of IT in health and seeking collaborations and building capacities of the relevant stakeholders in parallel to Telehealth service. This section provides the relevant information in this context.

Training workshop on Sexual and Reproductive Health (SRH) in collaboration with WHO

A refresher training on Sexual and Reproductive Health (SRH) for telemedicine providers was organized by COMSATS, in collaboration with WHO Pakistan, for the doctors working at COMSATS Telehealth resource Centre. A similar training was organized by COMSATS and WHO in the year 2020 to support the Telemedicine providers of three organizations including COMSATS. This time, 15 doctors from COMSATS Telehealth Resource Centre attending the



training workshops that spanned over a period of three days.

The aim of the training was to support the family physicians/general physicians at COMSATS Telehealth, in achieving personalized learning goals in Sexual reproductive health that are aligned with latest WHO guidelines and Telehealth practices.

The training initiated with brief introductions of the speakers and the participants followed by short pre-training assessment of the participants. The focal person of WHO-Pakistan, Dr Sayema Awais shared the status of SRH in Pakistan and gave overview of national comprehensive Guidelines on the topic in Pakistan and also distributed its copies among the participants. She informed the participants that the core content of the guidelines include preconception care, antenatal, intra- natal and postnatal care, along with family planning and selfcare sections.

Elaborating on the topic of antenatal care, Speaker Dr. Samina Naeem, consultant Gynaecologist emphasized that antenatal care aims to provide a women integrated care throughout pregnancy with the aim to reduce complications and timely referrals to avoid perinatal deaths. Dr. Samina explained the important aspects of antenatal care e.g. maternal and fetal assessment, nutritional evaluation and physiological symptoms worth paying attentions through examples during her own experience. The Antenatal care was followed by presentations on Routine Care in labour and delivery emphasizing on the timing and the need of referral.

On the second day, the speakers specifically highlighted postpartum care, family planning and mental health disorders related to SRH. Dr Nabia Tariq, Consultant Gynaecologist & Director Academics Maroof International Hospital Islamabad discussed various family planning methods, their pros and cons through activity based interactive and collaborative learning approach. She specifically emphasized on the counselling techniques that is the most difficult step in contraception.

Dr. Maimoona Saadi, the technical officer, Mental Health, WHO gave insights into the mental health issues related to SRH, especially postpartum depression(PPD). She shared with the participants that every 1 in 10 patients suffer from PPD that makes it necessary for the primary care providers to differentiate the PPD with baby blues through symptoms and know the counselling and educative measures for treatment.

The last speaker for the day was Dr. Ayesha Babar, Al-Shifa School of Public Health who appraised the participants of the importance of the postpartum as 2/3rds of the approximately 500,000 women that die every year due to pregnancy-related complications, are in the postpartum period. She elaborated on the timings of the discharge of the patients from hospital and discussed in detail the signs and symptoms to look for on follow-up visits at third day, 7-14 day and at six weeks.

Dr. Ayesha Babar covered the postpartum care in two phases. Phase one was presented on day two of the training while the rest of the presentation was completed on the last and final day. On the last day she also discussed the new born care with





the participants. She provided detailed insight on the routine checkups, red-flags and abnormal signs to look for in the new born.

Dr. Sayema Awais, shared the self-care interventions with the participants that may help the trained physicians for their personal care and can be passed on to the patients when needed. Other than the topics discussed during the previous days, she focused on the Sexually transmitted diseases, new recommendations on self-screening with ovulation predictor kits (OPKs) for fertility regulation, family planning and elimination of unsafe abortion through self-care. The last presentation of the day was abortion care presented by Dr. Samina Naeem, who elaborated on the complications of unsafe abortion, how to recognize the danger signs and appropriate treatment accordingly. She also explained the relevant laws within Pakistan and the circumstances where it is allowed.

Closing session of the training was held on the third day (March 08, 2024). Amb Dr. Mohammad Nafees Zakaria, Executive Director COMSATS was the chief guest of the ceremony. Dr. Ellen Thom, Team lead Maternal and Child Health (MNCH), WHO, also attended the session on the behalf of her organization.

In her introductory remarks Dr. Sayema Awais recapped the three days of training workshop followed by the vote of thanks presented by Dr. Azeema Fareed, Additional Director (Health) and Incharge Telehealth, COMSATS Secretariat. She expressed gratitude on behalf of the COMSATS to the partner organization WHO and the worthy speakers for the support that made the three day workshop possible.

Talking on the occasion, Ms. Ellen Thom referred to the previous workshop conducted back in the year 2020 and expressed her pleasure to be part of the training "as coming back home". She stated how Telemedicine was a new thing back then however it has become a norm since COVID. She also pledged to continue collaboration with COMSATS in future.

Speaking on the occasion, the Executive Director COMSATS expressed his hope that the skills and knowledge received by the Telehealth physicians during the workshop will in turn benefit their patients who hail from the areas that are hard to







reach to healthcare. He highlighted the workshop as symbol of the COMSATS' commitment to leveraging technology for better healthcare and enhancing its effectiveness through capacity building of the providers. He appreciated the dedication of the doctors working at Telehealth and lectured that the responsibility you shoulder today extends far beyond the confines of this workshop i.e. to the communities that you serve.

The closing ceremony was followed by cake cutting ceremony, celebrated in the context of International Women's Day that coincided with the last day of the training.

In summary, the training provided a quick refresher for the physicians working with COMSATS Telehealth elaborating on many new guidelines and aspects that might have been different when the doctors last received any formal training.

MoU between COMSATS and EZShifa

COMSATS and EZShifa Pvt Ltd, signed a Memorandum of Understanding for the provision and advancement of Telehealth and telemedicine services, and leveraging technology and operations, with a common vision of making quality healthcare accessible and affordable for all.

The agreement was signed by Ambassador Dr. M. Nafees Zakaria, Executive Director COMSATS, and Dr. Adnan Siddiquie, Chief Operating Officer EZShifa for their respective institutions. The agreement aimed to strengthen COMSATS' Telehealth program for its Member States, enriching it with technological options for telemedical consultations. Moreover, the MoU provides grounds for collaboration in developing technology products, particularly biomedical devices, as well as academic/training activities.

Later on testing sessions of the medical equipment were carried out, the last of which was attended by the heads of both the organizations.

Participation in 14th International Public Health Conference, 2024

Dr. Azeema Fareed, Additional Director (Health), participated in the 14th International Public Health Conference, held at the Health Services Academy, Islamabad, on 5–6 November 2024. On the behalf of the Executive Director, COMSATS, she co-chaired a session titled "Technological Application for SBC Programs".

The event was organized by Health Services Academy Islamabad in collaboration with Pathfinder. Commenting on the spirit of the event, she emphasized the need of judiciously utilizing easily available digital and technological means to ensure better data management & documentation in healthcare. During the event networking was done with Research and Development solutions (RADS) which was later one taken up for possible research in Telehealth and with the Revive Medical Technologies for possible common ground in tech development.

Visits

A pioneer in Telehealth work in the region, COMSATS provides learning and exchange opportunities to its visitors.







Demonstrations and briefings are given quite regularly to visitors from Diplomats and government functionaries to students looking to pursue research or careers in digital health technologies. Owing to the renewed efforts of the COMSATS' leadership and vision for widespread provision of Telehealth in Pakistan and replication of the Program in Member States, COMSATS Telehealth has attracted a number of Ministers in Pakistan and from foreign countries, diplomats, dignitaries and senior government officials, for visit and discussions.

- Secretary General, Commonwealth, Honorable Patricia Scotland & Honorable Minister for Science and Technology, Ministry of Science and Technology, Government of Pakistan, visited Telehealth Resource centre as a part of their visit to COMSATS accompanied by the Executive Director. The delegation witnessed the functioning of COMSATS Telehealth Program. Dr. Azeema Fareed, Incharge CTH, introduced COMSATS Telehealth system, including the infrastructure, diagnostic tools, and other technical aspects of the programme. Both the visitors praised it as a tremendous healthcare service for remote regions of Pakistan.

- A delegation comprising officials from Kenya's IT department, Ms. Fridah M. Mwangangi and Mr. Osbert K. Kororia, accompanied by Mr. Masoud J. Rasam, Counselor of the Kenyan High Commission in Islamabad, paid a visit to the COMSATS Telehealth Resource Centre on March 5, 2024. Mr. Irfan Hayee, Additional Director (Programs) at COMSATS, facilitated the delegation, while Dr. Azeema Fareed, Additional Director, Health at the Resource Centre, coordinated and conducted the visit.

  During the visit, the delegation received an overview of the Telehealth service model operating in remote areas of Balochistan. They expressed interest in the technological aspects of the Telehealth system, particularly its security features for data protection. The delegation interacted with the doctors working at the Resource Centre, inquiring about patient load, satisfaction levels, and the benefits of the service. They also showed interest in the patient software used for data exchange.

  Ms. Fridah elaborated on Kenya's health system, highlighting the predominant role of nurses in basic health facilities. The hosts underscored role of paramedics in the program, the benefits of Telehealth and insights into daily patient turnout.

  Following the visit to the Telehealth Resource Centre, the delegation met with the Executive Director of COMSATS to explore avenues of collaboration. Discussions focused on potential support from COMSATS in cybersecurity and further cooperation in the field of Telehealth to benefit Kenya.

  This visit marks a significant step towards fostering partnerships between COMSATS and Kenya in advancing healthcare and cybersecurity initiatives.

- Former Senator, Honorable Madam Seemi Ezdi visited COMSATS Telehealth Resource Centre to observe the services being provided to the rural areas of Balochistan. She also met the Executive Director COMSATS, later on. During the meeting, she appreciated quality healthcare provided by CTH & discussed need to collaborate & create awareness on Telehealth & issues like breast cancer & mental Health

- As a part of their field visit activities, Undergraduate students from Public Health program at Bahria University Islamabad, visited the Resource Centre in Islamabad. During the two day field visits, the 3rd and 5th semester students learnt about & viewed practical demo of doctors at the Resource Centre providing primary healthcare through Telehealth system. Besides offering virtual access for primary healthcare to the remote population COMSATS Telehealth, is building the capacity of the health & allied professionals through such visits & activities for better understanding of Digital Health's role in Maternal and Child Health (MNCH), health systems & Universal Health Coverage.

- On 15th May 2024, a delegation of Ministry of National Health Services Regulation and Coordination (NHSRC), Pakistan, and representatives from the World Health Organization (WHO), led by Deputy

Director-General (MoNHSRC), Dr. Soofia Yunus visited COMSATS and its Telehealth Centre. The visit was a manifestation of the growing interest in COMSATS' tech-enabled healthcare. Exploration of COMSATS Telehealth Infrastructure housed in COMSATS Internet Services led to the visitors' appreciating the program's diverse areas and medical facilities, operational aspects, financial structure, and the setup of Telehealth clinics, emphasizing the program's capacity to reach even the remotest areas of Pakistan. During the meeting with the Executive Director COMSATS, Amb. Dr. Mohammad Nafees Zakaria, the visitors commended COMSATS' efforts. The Executive Director assured organization's support to Pakistan, which is a founding member of the IGO and hosts its Secretariat in Islamabad. The visit marked the beginning of an association between the Ministry and COMSATS, that is materializing in the form of many joint activities in the next year.

COMSATS Centre for Climate and Sustainability (CCCS)

The COMSATS Centre for Climate and Sustainability (CCCS) delivered an expansive and multidimensional program of initiatives over the reporting period, strategically positioning itself at the heart of regional and international climate action dialogues. Grounded in science, guided by multilateralism, and driven by South-South and Triangular Cooperation, CCCS sustained high-level engagement with governments, academic institutions, multilateral bodies, and development organizations. Its work reflects CCCS' commitment to achieving transformative outcomes in climate resilience, sustainable development, and scientific capacity enhancement across the Global South. While comprehensive details of these activities are presented in the previous sections of this annual report, the following provides a concise overview of key highlights.

High-Level Engagement and Global Representation

A highlight of the reporting period was the prestigious visit of H.E. Mukhtar Babayev, Minister of Ecology and Natural Resources of Azerbaijan and President-Designate of COP29, to the COMSATS Secretariat on 10th May 2024. The visit signalled recognition of COMSATS as a critical regional stakeholder in global climate diplomacy.



President of COP29, Azerbaijan's Minister of Ecology and Natural Resources, H.E. Mr. Mukhtar Babayev, visited COMSATS on May 10, 2024

COMSATS' participation in the 29th Conference of the Parties (COP29) held in Baku, Azerbaijan, represented a strategic milestone. Led by Ambassador Dr. Mohammad Nafees Zakaria, Executive Director, CCCS team organized and actively contributed to 13 side events across leading pavilions, including UNFCCC, ICESCO, and Pakistan Pavilions. These events covered a wide spectrum of issues, from climate finance, just energy transitions, and carbon governance to the role of youth and emerging energy technologies.

The delegation's engagement enabled bilateral interactions with over 25 dignitaries and key figures from international organizations, regional blocs, and member state delegations. This engagement strengthened CCCS' position as a vocal advocate for the Global South in climate policy spaces. CCCS' sideline events brought together over 40 experts and resource persons from more than 25 institutions. These experts contributed to high-level thematic panels on green finance, biodiversity, renewable energy, sustainable agriculture, and carbon markets.

Policy Advocacy and Multistakeholder Platforms

Demonstrating its growing policy influence, Ambassador Dr. Zakaria was appointed to the Advisory Committee to the Coordinator to the Prime Minister on Climate Change, alongside key public and private sector actors. The committee has been instrumental in shaping national strategies on climate governance, promoting climate literacy, and reviewing sectoral emissions across transport, urban development, and waste management.

During the inaugural meeting of the committee, CCCS played a critical role in shaping discussions on behavioral change, waste import bans, climate-smart education, and promoting low-emission development strategies. This high-level engagement reinforces CCCS' credibility as a national policy actor on climate resilience and sustainable planning.

Capacity Building through Scientific and Technical Trainings

a. Metagenomics-Based Surveillance Workshop

In collaboration with ICGEB and COMSATS University Islamabad, CCCS co-organized a four-day international training workshop on "Metagenomics-Based Approaches for Viral Disease Surveillance." CCCS won a grant of 10,000 euros from ICGEB under its call for ICGEB Meetings to support the organization of this workshop. This

COMSATS' Events on the Sidelines of the COP29			
Area	**Event Title**	**Organizing Partners**	**Pavilion**
Youth	Global Youth Leadership on Climate Action"	COMSATS & MoCC&EC, GoP	Pakistan's Pavilion
Green Finance	Global Climate Finance Mechanisms: Accessing Equity and Effectiveness	COMSATS; ICESCO, FFC-FACE; NDMA; NDRMF; & CRCC	ICESCO's Pavilion
	Optimizing Small-Scale Renewable Energy Projects and Navigating their Finance	COMSATS & ICESCO	ICESCO's Pavilion
Green Energy & Clean Energy	Enhancing Multi-Stakeholder Collaboration for Advancing Emerging Energy Technologies	COMSATS; ICESCO; TÜBİTAK; ECCO Think Tank, Italy; & FFC-FACE	ICESCO's Pavilion
	Advancing Renewable Energy Solutions through Environmental Monitoring and Solar Mapping	COMSATS & ICESCO	ICESCO's Pavilion
Climate-Resilient Agriculture	Economic Impacts of Climate Change on Agriculture: Predictive Modeling Insights	COMSATS; ICESCO; IOFS; ICARDA; & FFC-FACE	ICESCO's Pavilion
	Integrating Permaculture and Predictive Modeling for Climate-Resilient Agriculture	COMSATS; ICESCO; ICARDA; & FFC-FACE	ICESCO's Pavilion
	Towards Climate Resilient Food Systems	COMSATS; MoCC&EC, GoP, ICESCO; & SDPI	ICESCO's Pavilion
Water & Biodiversity	Enhancing Water Security, Biodiversity, and Peace through Innovation and Earth Observation	COMSATS; ICESCO; & IOFS	UNFCCC's Pavilion
Carbon Markets	Strengthening Governance Frameworks for Carbon Markets in Global South	COMSATS & MoCC&EC, GoP	Pakistan's Pavilion
Climate Change & Health	Climate Change – Antimicrobial Resistance (AMR) Nexus	COMSATS; ICESCO; NRC Egypt; & FFC-FACE	ICESCO's Pavilion
Green Transport	Decarbonizing Road Transport: Innovations and Policies for Electric and Hydrogen Vehicle Technologies	COMSATS; ICESCO; ECOSF; TÜBİTAK; & FFC-FACE	ICESCO's Pavilion

hybrid event brought together over 50 participants from Pakistan, Ethiopia, Sudan, Bangladesh, and Kazakhstan.

The training covered advanced topics such as next-generation sequencing (NGS), microbial taxonomy, data visualization, virome analytics, pathogen detection platforms, and bioinformatics ecosystems. Sessions were delivered by domain experts from ICGEB Italy, Royal Scientific Society Jordan, King's College London, and ICCBS Karachi.

The workshop provided theoretical and practical exposure to bioinformatics tools used in disease surveillance. Participants engaged in sessions on differential gene expression, artificial intelligence in viral analytics, RNA sequencing, and antimicrobial resistance. The program strengthened global health security dialogues and empowered early-career scientists with tools for genomic surveillance.

b. Carbon Markets and Climate Finance Workshop

CCCS also conducted a technical workshop on Carbon Markets and Carbon Credits, aimed at demystifying the emerging carbon economy for practitioners in Pakistan. The sessions addressed international frameworks under Article 6 of the Paris Agreement, MRV protocols, emission trading systems, and private-sector engagement strategies. This initiative laid foundational knowledge for a future-ready climate finance ecosystem and directly contributes to national climate commitments. Notably, participants were guided through real-world case studies, including Pakistan's own carbon market readiness, project-level GHG tracking, and

CCCS Events and Activities			
Event Title	**Organizing Partners**	**Venue**	**Date**
International Forum on Modern Trends in Sustainable Development of Biological Sciences	COMSATS, COMSTECH, Al-Farabi Kazakh National University	KazNU, Kazakhstan	27th – 28th March 2024
Workshop on "Metagenomics-based approach for Viral Disease Surveillance"	COMSATS, ICGEB, CUI Islamabad	CUI, Islamabad	16th – 19th September 2024
Webinar on "Women in Science: Shaping Tomorrow's Innovation"	COMSATS	online event	12th February 2024
Earth Day 2024 – Pakistan's Roadmap for Plastic Action	COMSATS, MoCC&EC Government of Pakistan	COMSATS Secretariat	30th April 2025
High-Level Panel Discussion on World Environment Day	COMSATS, MoCC&EC, MoFA, ECOSF, FACE	MoFA, Government of Pakistan	5th June 2024
In-house training workshop on Carbon Markets and Carbon Credits	COMSATS	COMSATS Secretariat	30th April 2024
Expert round-table on "Addressing Smog and its Challenges in Mountain Regions"	COMSATS, NDRMF, Kohsar University Murree	Kohsar University Murree, Pakistan	6th December 2024

digital MRV tools.

To enhance outreach and ensure equitable access, the training sessions were also offered in an online format. Participants were provided with comprehensive resources—including hands-on guides and recorded lectures—to facilitate continued learning and broader dissemination of knowledge. These efforts supported an inclusive and engaging learning environment throughout the four-day program, enabling broad participation across geographic and institutional boundaries.

Strategic Alliances and Institutional Partnerships

Two key formal engagements were established during the reporting period:

- A Memorandum of Understanding with the Economic Cooperation Organization Science Foundation (ECOSF) to co-develop regional programs in environmental sustainability and climate education.
- A Letter of Agreement with the National Institute of Disaster Management (NIDM), Pakistan, focusing on knowledge exchange in disaster preparedness, early warning systems, and climate-induced risk mitigation.

The MoU with ECOSF also sets the groundwork for joint programming in science communication, regional conferences, and climate innovation accelerators. Meanwhile, the NIDM collaboration is expected to result in co-developed resilience curricula and simulation-based climate training modules.

Gender and Inclusion in Climate Science

On the International Day of Women and Girls in Science, CCCS hosted a well-received webinar on "Women in Science: Catalysts for a Sustainable Future." The event featured global voices that underscored the critical role of women in scientific innovation, climate technology, and community-led sustainability practices.

Speakers included researchers and policymakers from across the Global South, highlighting the importance of integrating gender-sensitive approaches in data governance, agricultural innovation, and water management.

Observance of Global Climate Days

CCCS co-led major observances in collaboration with the Pakistan' Ministry of Climate Change and Environmental Coordination (MoCC&EC), and Ministry of Foreign Affairs (MoFA), among others:

- International Mother Earth Day (April 22): Focused on plastic pollution and national waste management pathways. The event featured commitments from policymakers to expand Extended Producer Responsibility (EPR) legislation and integrate waste tracking systems.
- World Environment Day (June 5): Hosted at MoFA and attended by international diplomats, the event helped raise awareness regarding the significance of environmental protection and paved the way for collaboration among various stakeholders in order to develop S&T-based solutions for environmental challenges.



These observances facilitated high-level dialogues and aligned COMSATS' agenda with the UN's global climate calendar.

Regional Forums and Cross-Border Science Engagement

As a co-organizer of the International Forum on Modern Trends in Sustainable Development of Biological Sciences, hosted by KazNU, CCCS contributed perspectives on biotechnology, life sciences policy, and regional STI collaboration. The event reinforced COMSATS' South-South collaboration objectives and facilitated knowledge sharing on advanced biotechnology research from Central Asia.

In collaboration with NDRMF and Kohsar University, CCCS convened a targeted roundtable on smog and air quality in mountain ecosystems. The event convened leading experts, academics, and policymakers to examine the multifaceted impacts of smog on public health, the environment, and economic resilience, with a particular focus on mountainous areas.

CCCS has established itself as a catalyst for climate diplomacy, capacity building, and policy influence within the COMSATS framework. By actively participating in international forums, producing cutting-edge scientific knowledge, and fostering inclusive cross-sectoral partnerships, CCCS continues to connect global sustainability goals with localized, actionable solutions.

COMSATS Internet Services (CIS)

COMSATS Internet Services is the pioneer Internet Service Provider (ISP) in Pakistan, established by COMSATS in the year 1995 as a project which was later on notified vide COMSATS notification dated 12th February 1999.

CIS offers diversified services like Wireless broadband, Domain & Web Hosting, On demand broadband, Data Center Services, Video conferencing, Website Designing and Development, Search Engine Optimization, Virtual Private Servers, Networking, IT training, Tele Health and internet related research facilities. CIS is presently operating in almost all major cities of Pakistan. For the last 29 years, CIS has been recognized among the top rated ISPs in Pakistan.

CIS operating with its head office in Islamabad and sub offices / nodes at major cities of Pakistan. All offices / nodes operations are structured & managed through GMs / DGMs and Manager (Operations). Similarly, all the nodes are working through corporate office Islamabad under the supervision of Chief Operating Officer who further reports under the directions of Executive Director COMSATS who acts as head of the organization.

CIS customers belonging to prominent organizations both in public and private sectors, well-known national and international companies and firms, software and business companies, foreign missions, non-governmental organizations, universities, social development and research organizations.

CIS is a self-sustainable organization and operates within the over-arching structure of COMSATS under the leadership of Executive Director COMSATS. CIS overall revenue is generated from the provision of internet bandwidth; value added services and data center services offered to the government & corporate services / organizations.

CIS Core and Value-added Services

CIS Core Services

CIS has nine core services known as 'The Colors of CIS'. This includes Tornado® (Wireless broadband), Hawaii™ (Domain, Hosting, and VPS) and COMSpeed™



(Optical Fiber Connectivity). Our value added services include Hurricane™ (On-demand broadband), Prism™ (Website development), Viacon™ (Video conferencing), COM meeting™ (Web Conferencing Service), COMSATS Innovation- IOT and ComClinic™ which is a brand name for Tele-health service delivered by CIS to the people living in underdeveloped and scattered areas of Pakistan.

Data Centers

COMSATS Internet Services (CIS) has well-equipped data centers in Islamabad & Lahore offering a variety of services including Virtual Private Servers, Domain Registration, Website Hosting, Co-location of Server's and Rack's space to customers. Hosting services are being offered on both Windows and Linux platforms. The expanded Data Center infrastructure with state of the art technologies is operational at CIS Technology Park building Islamabad for CIS existing and new potential customers. The overall capacity of new data center is 1,525 Sq. ft. and approximately 45 sever racks, each sized 42U, can be accommodated. The IPV6 has been implemented accordingly. Additionally, measures has been adopted for precision cooling system along-with humidity controller, safety measures like fire suppression along with four stage fire alarm, power matters, N+1 electric system that includes UPS and backup electric generators. The data center is backed cyber security system with round the clock surveillance, installation of biometric security system and protected with advanced Huawei & Juniper firewalls.

During the year 2024, CIS data center, Islamabad has been upgraded including power capacity of data center from 80-KW to 200-KW, placed 4-Ton floor standing air conditioner to maintain a moderate temperature and installed 10G, 48 switch alongwith 7 Dell R-730 servers for Proxmox cloud.

Video Conferencing

Nowadays, many businesses prefer video conferencing for communicating with remote offices and clients, to save travel cost and time. CIS provides video-conferencing facilities using the traditional equipment including Polycom, CISCO & other platform as well as on cloud services using Zoom, Microsoft & Google Team linked with dedicated sound & video feeds to CIS valued corporate & government customers for video conferencing within the country and abroad. CIS has well-equipped video conferencing studios for in-house VC. During the year CIS conducted video conferencing platforms for its potential customers as per requirement and user demand including modified VC platforms.

CIS Telehealth

COMSATS Internet Services (CIS) is the pioneer in introducing and establishing Telehealth Services in Pakistan. Telehealth is the use of digital information and communication technologies to access health care services remotely and manage primary and specialist health care at patient's door step.

Initially, CIS established a network of rural Telehealth setups at Federal & Provincial level during the year (2012-2015) to advocate the efficiency and effectiveness of system. The facility was extended in 2017 by establishing 03 clinics in Mardan, Mansehra & Swabi districts.

In 2020, an agreement was signed between CIS & PPHI-Balochistan for the establishment of rural Tele-Health clinics in the far flung areas of Balochistan.



Since then, 31 Tele Health clinics have been established so far. These clinics are located at Quetta, Gwadar, Noshki, Dera Bugti, Mastung, Qila Abdullah, Washuk, Jaffarabad, Dukki, Sibi, Kachhi, Sohbatpur, Musakhail, Punjgour, Chagai, Dera Bughti, Sohrab, Lasbela, Quetta, Turbat, Kharan, Harnai, Naseerabad, Qilla Saifullah, Awaran, Kohlu, Zhoub, Kalat, Chaman & Lorlai districts.

All established centers are fully equipped with the latest digital diagnostic equipment including vital sign monitor, digital stethoscope, examination camera, ENT & derma scope and ultrasound probe for onsite diagnostic. A centralized Tele Consult software portal is available for entering data both at clinic end and respective health specialist.

Similarly, to run general & specialist consultation at all established rural sites, CIS established Tele Health Resource Center at Islamabad where a panel of doctors is available 5 days in a week to provide online consultation including specialist consultation (General, Gynea & Obs, Pediatrician & Derma) to the patients visiting these clinics.

The use of technology to deliver health care has proven several advantages for the local community, including cost savings, convenience, and the ability to provide care to people with mobility limitations, or those in rural areas who don't have access to a local doctor or clinic.

This facility has been appreciated not only by local population but at government level because of the fact that this has enabled the local population to get medical & specialist health care services at the door step, free of cost. This has even saved long journey to travel to city and money saving as all the services are free for them. It was once only a dream for medical and specialist professionals in Islamabad to provide the most cutting-edge digital diagnostic health services to residents of such remote places via internet.

In 2021, CIS Tele Health was recognized globally for its delivery of digital health services and was awarded the 5th Commonwealth Digital Health Awards in the Telemedicine category by Commonwealth Centre for Digital Health (CWCDH).

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ACTIVITIES OF COMSATS CENTRES OF EXCELLENCE

A group of twenty-five S&T/R&D and higher education institutions from different developing countries, predominantly COMSATS Member States, is affiliated with COMSATS constituting its Network of International S&T Centres of Excellence. The Network serves as COMSATS' technical resource for South-South cooperation, in line with these institutions' mandates of having programmes of scientific research and development. This chapter covers reports received from COMSATS' Centres of Excellence, as well as news of some Centres covered in COMSATS Newsletter over the span of the year.



International Centre for Climate and Environment Sciences (ICCES), China

The International Center for Climate and Environment Sciences (ICCES) focuses its research on the key scientific problems relating to global climate and environmental changes.

Established in 1991, ICCES is devoted to establishing the cooperative and innovative research center in the area of climate and environment sciences, and provide services to the developing countries with scientific support, advisory, and capacity building.

Capacity-Building Activities

International Training Workshop on "Increasing Capability for Weather and Climate in Thailand through Numerical Methods Machine Learning and Artificial Intelligence" in Thailand

From August 6 to 9, 2024, the International Training Workshop on "Increasing capability for Weather and Climate in Thailand through Numerical Methods Machine Learning and Artificial Intelligence" (INCAP2024) took place in Bangkok, Thailand. This event was jointly organized by ICCES and the Hydrological Information Institute (HII) of Thailand.

Dr. Patamawadee Pochanukul, Director of the Thailand Science Research and Innovation Agency (TSRI), Dr. Royboon Rassameethes, Director of HII, Ms.





Prof. Zhaohui LIN
Director
International Center for Climate and Environment Sciences (ICCES), China

Climate change significantly affects global weather patterns, modifying the distribution of temperatures and precipitation. These alterations can result in more frequent and intense extreme weather and climate events, such as wildfires, typhoons, heatwaves, floods, droughts, and storms. The United Nations 2030 Agenda for Sustainable Development recognizes climate change as "one of the most significant challenges of our era" and emphasizes that "its detrimental effects hinder the capacity of nations to achieve sustainable development goals." Therefore, it is imperative that we take decisive action to address climate change and its consequences. We would like to express our appreciation for COMSATS' ongoing initiatives to foster international collaborations and initiatives aimed at combating climate change in the developing regions. In 2025, ICCES will further collaborate with COMSATS to advance joint efforts such as research projects, capacity enhancement, knowledge sharing, and the exchange of research personnel in the field of climate and environmental sciences, for the achievement of sustainable development goals in the South.



Wang Dongyao, Deputy Director of the International Organizations Division of the Bureau of International Cooperation Bureau, CAS, and Prof. Lin Zhaohui, Director of ICCES attended the opening ceremony and delivered the opening speech.

Prof. Lin Zhaohui highlighted that INCAP is a joint capacity-building activity aimed at enhancing the skills of researchers in Thailand and other developing countries in data science, model applications, and climate prediction. He noted the revolutionary impact of integrating numerical methods and machine learning Advances in machine learning and AI enable researchers to provide more reliable warnings for extreme weather and climate events, which is crucial for disaster preparedness and mitigation.

The four-day workshop featured experts from China and Thailand, who introduced cutting-edge tools and techniques in numerical methods, machine learning, and AI to enhance Thailand's meteorological and climate forecasting capabilities. Participants gained in-depth knowledge and practical skills in these areas and had opportunities to engage with experts, fostering knowledge exchange and interdisciplinary collaboration.

The training attracted over 120 participants from more than 20 universities, research institutes, and agencies across Thailand, including Chulalongkorn University, Chiang Mai University, Srinakharinwirot University, Kasetsart University, and the National Astronomical Research Institute of Thailand, as well as departments such as the Thai Meteorological Department and the Disaster Prevention and Mitigation Department. Participants actively engaged in the training, expanding their academic horizons and research capabilities in numerical methods, machine learning, and AI.

ICCES Hosted International Training Workshop on Climate Action

ICCES hosted the "International Training Workshop on Climate Action" in Beijing from September 2-6, 2024. The workshop focused on enhancing the capabilities of women scientists from developing countries, the workshop brought together over 60 participants, including 36 young female researchers from 22 countries, many of which are from Least Developed Countries (LDCs). Dr. Dana Shokparova from one of COMSATS Centre of Excellences, Al-Farabi Kazakh National



University (KazNU), Kazakhstan, was invited to attend the workshop. Dr. Dana Shokparova delivered a presentation titled "landscape response to climate change in Kazakhstan: focus on the Zhanaarka Region of Ulytau Oblast." The workshop was co-hosted by The World Academy of Sciences (TWAS), and the Elsevier Foundation.

The workshop aimed to build scientific capacity and leadership among women in regions most vulnerable to climate change. Through a series of intensive sessions, the workshop provided a platform for women scientists to enhance their leadership, project management, and science communication skills. Featured speakers included Tracey Brown, Director of Sense about Science, Dr. Scott Jones, Co-director of Mind the Gap Research and Training, and Professor Panmao Zhai, Co-Chair of the IPCC AR6 WG1. These experts shared their insights on bridging the gap between scientific research and policymaking, emphasizing the role of women in leading climate action initiatives.

The workshop's unique focus on integrating the themes of gender equality and climate action underscores the critical role women play in achieving sustainable development. By empowering female scientists from developing countries, the event addressed the need for diverse perspectives in climate research and innovation, fostering a global network of women leaders equipped to contribute to their communities and beyond.

The training also included visits to major scientific facilities, such as the Earth System Numerical Simulation Facility and a rainwater management project at Beijing's Olympic Park, providing practical insights into China's innovative approaches to sustainability challenges. These experiences underscored the importance of science and technology in driving sustainable development and reinforced the participants' understanding of how research can directly impact policy and community action.

Visits

COMSATS Secretariat Officials Visited ICCES

On September 13, 2024, a delegation from the Secretariat of COMSATS visited ICCES and held an exchange and discussion with ICCES research team. The COMSATS delegation were Mr. Irfan Hayee, Additional Director (Programmes), Mr. Farhan Ansari, Deputy Director (Programmes), and Mr. Baber Sultan, Programmes Officer. Prof. Wu Chenglai, Prof. Zhang He, Prof. Zeng Xiaodong, Dr. Jin Jiangbo, from ICCES participated in the discussion, which was chaired by Prof. Lin Zhaohui, Director of ICCES.

Prof. Lin introduced a series of scientific research work and international exchanges carried out by ICCES under the framework of COMSATS and put forward specific implementation suggestions on how to further strengthen cooperation with COMSATS in the future. All participants agreed that in the context of globalization, the connection and cooperation between COMSATS Centers of Excellence are particularly important. For instance, by jointly applying for international cooperation projects, these centers can pool their strengths to form powerful research teams to conduct in-depth studies on global issues such as climate change, public health, and energy security. By establishing regular exchange mechanisms and cooperation platforms, COMSATS Centers of Excellence can more effectively share information, coordinate actions, and jointly promote the process of global sustainable development.

Vice President of Institut Teknologi Sepuluh Nopember (ITS) visited ICCES

On September 13, 2024, Prof. Nurul Widiastuti, Vice President of Institut Teknologi Sepuluh Nopember (ITS), Indonesia visited ICCES. This visit marked the first time an ITS representative



visited ICCES, signifying a deepening of cooperation between the two COMSATS' centers of excellence.

During the meeting, Prof. Lin Zhaohui, Director of ICCES, and Prof. Nurul Widiastuti explored the possibilities of cooperation in various fields, including joint research projects, exchanges of students and researchers, seminars, and capacity building. These areas of cooperation span not only scientific research but also education and talent cultivation, aiming to promote the exchange of knowledge and technology and to jointly enhance the level of scientific research.

Both parties agreed that through cooperation, they can jointly address the challenges posed by climate change. For instance, joint research projects can delve into the impact of climate change on water resources, providing a scientific basis for water resource management and protection. At the same time, research on extreme weather and climate forecasting can enhance early warning capabilities for extreme weather events, reducing the losses caused by disasters. In addition, both parties also discussed how to mitigate the impact of climate change through technological innovation and policy intervention, promoting sustainable development.

Awards

Prof. Chenglai Wu from ICCES was selected as TWAS Young Affiliate

In November 2024, TWAS announced the list of a new batch of Young Affiliates. Prof. Chenglai Wu from ICCES, the Institute of Atmospheric Physics, Chinese Academy of Sciences, was selected as a Young Affiliate of TWAS from East Asia, Southeast Asia, and the Pacific region. His term will be from 2024 to 2029.

Since 2007, TWAS has been selecting Young Affiliates. Each year, no more than five Young Affiliates are selected from each of the five global regions. These individuals are considered as outstanding representatives of young scientific scholars in developing countries and are encouraged and supported to continuously strengthen scientific research and cooperation. This is to promote the development and progress of science and technology in developing countries.

Prof. Chenglai Wu has been engaged in the development and application of Earth system models. He currently serves as the joint leader of a subsystem of the national major scientific and technological infrastructure "Earth System Numerical Simulator Facility" (known as EarthLab) and as the project leader of the National Key Research and Development Program. In recent years, he has made significant progress in the development and coupling of dust emission models, regional and global dust cycles, aerosol-climate interactions, and climate prediction and projection. He has published more than 50 peer-reviewed papers, including one first-authored paper in "Nature Communications." He has received the 10th Tsinghua University - Inspur Group Young Talent Award in Computing Geosciences, the 2023 Institute of Atmospheric Physics Scientific and Technological Innovation Award, and the 2020 Editor's Citation for Excellence in Referencing of the American Geophysical Union. His work also contributed to one of the Ten Major Achievements in Meteorology Science and Technology in China in 2023.

Prof. Chenglai Wu's selection as a Young Affiliate of TWAS will further promote in-depth cooperation between ICCES and research institutions in developing countries, enhancing their scientific and technological capabilities to address global climate and environmental change challenges.

Royal Scientific Society (RSS), Jordan

The Research Scientific Society (RSS) is the largest applied research institution in Jordan. It, inter alia, provides consultancy and technical support services for scientific capacity-building. The Society serves as the local as well as regional reference point of knowledge for science and technology.

Technologies Developed/ Transferred

- Development and design of portable pilot Biogas (Anaerobic Digestion) system for onsite-testing of biomethane from different biomass. The system aims to test, monitor



HRH Princess Sumaya bint El Hassan

President
Royal Scientific Society (RSS), Jordan

Our region has endured a year of suffering that we had hoped never to see again. In such a small area of our planet's surface we feel so readily the pain that is being experienced across borders that unite us in solidarity and could never divide our common interests in justice and progress for all. Our brothers and sisters in Gaza are always in our thoughts. Their battered homeland is in our hearts. To remain sane in the face of such barbarity, and to remain focused on building a better future for our region, we look to science, technology and innovation. Science, when placed at the service of a truly humanitarian agenda, is mankind's greatest tool to reimagine and to rebuild.

It is in this context that we at the Royal Scientific Society strive to make a difference in any way possible. Through our efforts at knowledge creation, capacity building, research, innovation and education, we are determined to make that difference now and to place ourselves at the service of those in our nation and our region who desperately need knowledge-based solutions to the challenges of an age that seems to deliver increasingly new threats to security.

We persevere and we focus on strategic goals to respond to current and future challenges and to create opportunities for those who can imagine none. In 2024 we were proud to develop, transfer and deliver new technologies including initiatives to implement and support renewable energy projects, and to map pre-conflict building datasets for southern Lebanon to facilitate humanitarian aid, assess damage and rebuild communities.

Our contribution to a sustainable development agenda included the BUILD ME Project to accelerate the adoption of energy efficiency solutions and renewable energy technologies, and projects related to energy and finance savings for local authorities, and monitoring of water and energy consumption.

We initiated major research programmes to facilitate climate-smart activities, enhance water innovation for climate security and to map the WEFE network in Refugee camps. We led the way with research on circular food and energy systems and the conflict-affected symbiosis of water security and food security in Yemen.

I am proud to note that every aspect of our work is fundamentally concerned with Human Security. Our every effort is rooted in the belief that such a concept is not merely a luxury for some, but a right for all. Good science must prevail, and research for humanity must be supported and protected against threats and lack of interest. Our nation supports our work to the full, and our region is constantly in our thoughts as we set research agendas and commit ourselves to providing sorely needed solutions. I hope that next year will see a brighter beginning and a more hopeful horizon. I hope that next year Science for Humanity will be the message that reverberates from every corner of our long-suffering region.

and evaluate the yields in real-time conditions in order to evaluate the feasibility of Biogas Projects.

- RSS, through BUILD ME Project activities, developed the Building Energy Performance (BEP) tool to assess buildings in Jordan to accelerate the adoption of energy efficiency solutions and renewable energy technologies. An energy performance certification scheme has been developed and is expected to be adopted at the national level.
- RSS, through meetMED project, utilized the water-energy nexus tool to evaluate the consumption of energy and water-related equipment in two pilot buildings in Jordan (one residential and one public building).
- RSS-PSUT Youth Mappers contributed to developing a pre-conflict building dataset for districts in Southern Lebanon. This critical data will support:

  - Efficient and timely delivery of humanitarian aid.
  - Detailed damage assessments following conflicts.
  - Community rebuilding and recovery efforts post-crisis.

Activities on Developmental Issues

- RSS began developing training material for Resource Efficient and Cleaner Production (RECP) assessment to support Technical and Vocational Skills Development Commission (TVSDC) in qualifying and certifying RECP assessors in Jordan as part of the GAIN-GIZ project.
- RSS, through meetMED project, contributed in developing PRIORITEE tool (a decision support tool): a web-based application designed to help local and regional authorities evaluate potential energy and financial savings quickly and easily by applying energy efficiency (EE) measures and integrating renewable energy (RE) systems into public buildings.
- RSS was accredited as a training provider for the workshop 'Dealing with Natural Refrigerants and its Importance' by the Technical and Vocational Skills Development Commission.

Major Research Activities/ New Initiatives

- Climate-smart pathways for an Agile and Resilient Economy (CARE)
- Green Nexus: Piloting Circular Food and Energy Systems in Jordan
- Optimization of Controlled Environment Agriculture (CEA) for Enhanced WEFE Nexus Performance
- Navigating Conflict: A Comprehensive Analysis of Water Security and Food Security in Yemen
- Piloting Greywater Systems for Climate Security in Mafraq with Global Center on Climate Change, Water, Energy, Food, and Health Systems
- Microplastic Removal from Wastewater and Characterization of microplastic particles in water/ wastewater.
- Epidemiological Monitoring for Emerging and Re-Emerging Infectious Diseases in Airports' Wastewater Treatment Plants: Preparedness for Future Outbreaks)
- Legitimacy and Civic-ness in the Arab World: The Role of Humanitarian Funds Localisation for Disaster Risk Reduction and Management in Jordan
- Building Resilience through Circularity: Green Innovations in Host Communities and Azraq Refugee Camp (BRCkA)
- Rethinking Humanitarian Aid for Refugees as Investment in Urban Water and Sanitation
- Women Peace and Security Systems Strengthening (WPSSS)
- Increasing the Resilience of Caregivers and Families to Prevent Violent Extremism; International Organisation for Migration
- Activating policy advocacy for green business growth
- Integrating Water, Energy, and Food for Sustainable Development: Current Status, Challenges, and Opportunities
- Transboundary Climate Risks in the Middle East
- Reducing plastic waste through the right packaging of food and water products





Capacity-Building Activities

- Jordanian green building guideline
- Introduction of pyranometer, anemometer and light meter calibration
- Safe handling of natural refrigerants and importance
- Molecular techniques for testing emerging and novel viruses in wastewater samples, for 3 researchers from Sana'a University (Yemen)
- Energy Performance Certification (EPC) Expert Training – Build_ME Project
- Webinar on Kigali amendment implications in the EU and Jordan: from policy measures to market effects
- Green financing within Cool Up programme
- Strengthening national capacities in Jordan for achieving and monitoring land degradation neutrality
- Workshops and trainings on the preparation of climate resilient urban master plans for two municipalities in Jordan (Irbid and Mafraq) and setting up urban observatories to address urban risk issues.

International Collaborations and Agreements

- Agreement with Guidehouse Germany Gmbh, to inking ambitious energy development and efficient sector coupling in the MENA region project, 8/1/2024.
- Agreement with Uppsala University, Dairy farm biogas pilot in Al-Hallabat, 28/1/2024.
- MoU with the Circle Economy Foundation, to develop circular economy roadmap in Jordan and the region, 29/1/2024.
- Agreement with Royal Academy of Engineering, for Engineering Xchange, 10/3/2024.
- Agreement with Yale University, Global GreemChem Innovation and Network Programme, 25/6/2024.
- Agreement with Action Against Hunger, Water Quality Testing in Azraq Camp, 18/11/2024.
- Agreement with FHI360, Competency in biosafety and biosecurity, 2/12/2024.

International Awards and Recognition

Her Royal Highness Princess Sumaya bint El Hassan was reappointed for another term as UNESCO Goodwill Ambassador for Science for Peace. Since her original appointment in 2020, she has worked tirelessly to promote science as a tool for peace and understanding. This





renewed recognition reflects her inspiring leadership.

The National Energy Research Centre (NERC) at the Royal Scientific Society (RSS) received the Energy Globe Award 2023 for the Biogas Pilot Project in the Zaatari Refugee Camp. The award, granted by the Austrian Embassy, recognizes the implementation of a project that addresses challenges faced by the local community, including energy security, environmental, and social issues. By transforming waste into energy (biogas), the pilot project is capable of treating 2–4 tons of organic waste per day and is integrated with an electrical generator, as well as gas treatment and storage systems.

RSS was named "CHAMPION of Plastic Pollution Prevention in the Mediterranean" by the European Commission (EU), the Union for the Mediterranean (UfM), the United Nations Environment Programme (UNEP), and the Mediterranean Action Plan (MAP) under the Barcelona Convention in 2024.

Dr Othman Almashaqbeh won first place in the SDG-Impact Poster Competition organized by the WAITRO organization at the WAITRO Summit 2024, held from November 13–15 in Nanjing, China. His poster, titled "Hybrid Constructed Wetland for Wastewater Treatment," highlighted innovative solutions for wastewater management.

National and International-Level Patents and Publications (selected)

Published Books:

- Jordanian Building Codes/Manuals:
  - Central Heating Manual.
  - Mechanical Ventilation Manual, (Parts 1 and 2).
  - Solar Energy Code and Manual.
  - Energy Efficient Code and Manual.
- Training Manual: Guide to Integrating Gender in Local Development Programs

Other Remarkable Undertakings

The Royal Scientific Society's National Software Quality Assurance Centre (NSQAC) has become a Platinum Level member of the ISTQB Partner Program. The ISTQB Partner Program acknowledges organizations that show a dedicated commitment to software testing certifications.

The First National Conference on the Circular Economy, titled "Transition to a Circular Economy: Jordan's Opportunity for Employment and Growth," was organized by the Royal Scientific Society and the Circular Economy Club - Amman. The conference was held in cooperation with the Jordan Strategy Forum and the project to promote green activities in

industrial facilities, implemented by the German Cooperation Agency (GIZ).

RSS supported Jordan Ministry of Environment in developing the National Cooling Strategy through the Cool Up Programme, which was published in 2024. The strategy charts a comprehensive roadmap for optimising cooling technologies, reducing energy consumption and minimising environmental impacts.

A draft of new guideline was developed for Resource Efficiency Assessment in Households, to be validated in 2025 as part of EU-RSS Building Resilience through Circularity Project. The new guideline was tested in 80 houses in Karak, Ramtha and Azraq, and will be further tested in an additional 20 houses in Amman.

RSS contributed to the Third National Energy Efficiency Action Plan (NEEAP) for the Hashemite Kingdom of Jordan from 2021–2025, which was led by the Ministry of Energy and Mineral Resources.

Al-Farabi Kazakh National University (KazNU), Kazakhstan

One of the world's oldest leading universities established in 1934, Al-Farabi Kazakh National University (KazNU) has made enormous contributions towards the advancement of science and technology in Kazakhstan. Named after Eastern philosopher and scholar, Abu Nasr Al-Farabi, the University is placed 165th by the International QS World University Rankings (QS WUR). KazNU is the Global Hub of the United Nations Academic Impact (UNAI) Programme on 'Sustainable Development' and has also launched 'Ban Ki-moon Institute for Sustainable Development' to coordinate activities relating to sustainable development and green economy.

Implementation of international research projects involving COMSATS members

In 2024, two researchers of the Faculty of Biology and Biotechnology at KazNU successfully completed their research projects funded under the Belt and Road Fellowship Initiative of Tianjin Synthetic Biotechnology Innovation Capacity Improvement program:

Research Project Title: Research and Development of Synthetic Microbial Pesticide
PI: Senior Lecture, Meruert Bauenova

Research Project Title: Research and Development of Synthetic Microbial Fertilizer
PI: Prof. Assemgul Sadvakasova

Seven young scientists from KazNU received funding to conduct collaborative research, or pursue postdoctoral work, or receive trainining at TIB

International Forum "Modern Trends in Sustainable Development of Biological Sciences"

On March 27-28, 2024, the Faculty of Biology and Biotechnology, KazNU, in collaboration with COMSATS and other partner institutions organized the International Forum titled "Modern Trends in Sustainable Development of Biological Sciences", URL: https://farabi.university/news/86962). The conference proceedings were published in the Bio Web of Conference, indexed in the Scopus bibliographic database.

COMSATS, along with the Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (COMSTECH), and the Institute of Dendrology Azerbaijan National Academy of Sciences provided sponsorship and contributed to the organization of this forum. COMSATS also funded the participation of several foreign researchers and extended support in various other areas, reaffirming its commitment to promoting scientific cooperation and sustainable development.

Participation in the 25th Meeting of the COMSATS Coordinating Council in Tianjin, China

KazNU participated in the 25th Meeting of the COMSATS Coordinating Council, held from September 10–12, 2024, at the Tianjin Institute of Industrial Biotechnology (TIB), China. Dr. Gaukhar Datkhabayeva, Deputy Dean for Scientific Innovation Activities and International





Cooperation at the Faculty of Biology and Biotechnology, represented KazNU at the meeting. The event focused on enhancing science and technology collaboration across the Global South and was attended by approximately 60 delegates, including members of the COMSATS Coordinating Council, its Technical Advisory Committee, and representatives from partner organizations.

Participation in the International Seminar on Metagenomic Approach to Viral Disease Surveillance

From September 16–19, 2024, Professor A.K. Sadvakasova and Senior Lecturer A.B. Kakimova from the Department of Biotechnology at KazNU participated in the International Seminar on the Metagenomic Approach to Viral Disease Surveillance. The event was organized by COMSATS and the International Centre for Genetic Engineering and Biotechnology (ICGEB), and hosted at COMSATS University Islamabad, Pakistan. The seminar focused on training participants in metagenomic methods used for epidemiological surveillance of viral diseases, which are essential for achieving the United Nations' Sustainable Development Goals (SDGs), particularly in the area of healthcare (SDG 3: Good Health and Well-being).

The metagenomic technologies discussed during the seminar represent innovative approaches for the early detection of viral threats, contributing to the creation of more resilient healthcare systems. Dr. Silvano Piazza, from the International Centre for Genetic Engineering and Biotechnology (ICGEB, Italy), delivered a lecture titled "Recent Advances and Future Trends in Viral Metagenomics," which generated significant interest among participants.

On the sidelines, Kazakhstani delegates met with Executive Director COMSATS, Ambassador Dr. Mohammad Nafees Zakaria, to explore avenues for scientific cooperation between Kazakhstan and Pakistan, in alignment with SDG 4: Quality Education.

Such international seminars play a crucial role not only in the professional development of scientists but also in advancing the United Nations' Sustainable Development Goals (SDGs). Participation in such events allows scientists to exchange cutting-edge knowledge, discuss the latest research, and gain access to the most advanced methods and technologies, ultimately leading to the implementation of innovative solutions at both national and international levels.

Some R&D Activities at KazNU

Production of Innovative Biobriquette Technology

Researchers at Al-Farabi Kazakh National University have unveiled a pioneering method to transform lowgrade coal into briquetted coal by leveraging the power of bacteria. This innovative project not only promises to mitigate environmental concerns associated with coal usage but also holds significant implications for Kazakhstan's industrial landscape. By infusing bacteria into low-grade coal, KazNU scientists have successfully developed briquettes that significantly reduce smoke emissions and harmful sulfur content. This breakthrough addresses a critical need, as a substantial portion of Kazakhstan's coal production comprises lowgrade variants lacking in quality. The applications of these bio-briquettes are diverse, ranging from use in the food industry to power





generation in combined heat and power plants. Additionally, these eco-friendly alternatives hold promise for household heating in regions where natural gas supply is insufficient, thereby reducing reliance on traditional, smoke-emitting coal.

Kazakh-Chinese Joint Laboratory for Environmental Monitoring Inaugurated at KazNU

On March 25, 2024, Al-Farabi Kazakh National University proudly unveiled the Kazakhstan-China joint laboratory "Remote Sensing Technology and Applications," poised to address pressing environmental challenges in the Central Asian region.

This state-of-the-art facility represents a landmark collaboration between Kazakhstan and China in the field of science. With KazNU allocating and refurbishing a 500-square-meter space for the laboratory, and China providing funding of 55 million tenge (approximately 1 million yuan) for equipment, the joint endeavor is poised to make significant strides in environmental research and collaboration between the two nations. Situated within KazNU's Faculty of Geography and Nature Management, the joint laboratory stands as the sole natural resource monitoring center in Central Asia. Beyond its role in scientific research, it serves as a pivotal hub for promoting sustainable environmental development in the region.

Designed to monitor environmental issues like water scarcity, drought, and land degradation exacerbated by climate change, the laboratory utilizes remote sensing technology to ensure environmental security and sustainable development. It serves as a beacon of international cooperation, fostering a high-tech platform for resource research in Kazakhstan, China, and Central Asia.

The signing of an agreement between KazNU and Xinjiang Institute of Ecology and Geography marked a pivotal moment in the laboratory's establishment, symbolizing a commitment to advancing scientific cooperation.

National Mathematical Centre (NMC), Nigeria

The National Mathematical Centre (NMC), Nigeria, is an inter-university organization that promotes research and capacity-building in mathematical sciences.

NMC was established in 1989, inter alia, to train and develop high quality human resource in Mathematical Sciences, for enhancing students' performance in Mathematics and Mathematical Sciences at all levels of Nigerian education system.

Capacity Building and R&D Activities

Foundation Postgraduate Course on Emerging Trends in Software Engineering Principles and Programming

Held from 3–15 March 2024, the objective of the training program was to explore emerging trends in software engineering and programming, with a focus on identifying real-world challenges and addressing them through innovative solutions.

Three Research groups were created:

1. AI Based Enhanced Data Capturing and Verification System To Support National Identity Database Integrity.
2. Alert System For Safety In Taxi Rides
3. AI powered Debit Alert Monitoring System on Bank Accounts

International Conference and Advanced workshop on modelling and simulation of complex systems

An International Conference and Advanced Workshop on Modelling and Simulation of Complex Systems was held at Obafemi Awolowo University, Ile-Ife, Nigeria, from 27–31 May 2024. The event brought together researchers and experts to explore advanced techniques in system modelling and simulation, fostering regional and international scientific collaboration.

International Conference/Workshop on Mathematical Sciences and Optimization (ICMSO 2024)

The conference was jointly organized by the National Mathematical Centre (NMC), the Association of Mathematical Science in the Department of Mathematics, and Department of Computer Science, University of Lagos, from 26–31 August 2024. The theme of the conference was "Applying Mathematical Research to the 4th Industrial Revolution."





Research Oriented Course in Time Series Analysis & Applications

The Course held from 29 September-11 October, 2024, and the target audience was Tertiary Institutions' Lecturers, Researchers & Postgraduate Students. The main objective of the course is to apply time series theoretical concepts acquired during the 2023 Foundation Postgraduate Course (FPC) in solving societal problems.

Research Oriented Course in Multivariate Statistics & Applications

Held from 3-14 November, 2024, and the target audience was tertiary institutions' Lecturers, Researchers & Postgraduate Students. The main Objective: To apply Multivariate Statistics theoretical concepts acquired during the 2023 Foundation Postgraduate Course (FPC) in solving societal problems

Foundation Postgraduate Course in cyber security and its application in national development

Held from 10-22 November, 2024, this foundation Course on the impact of Cyber security and its Application to National Development is aimed at building capacity and enhancing the skills of participants in understanding, addressing, and mitigating cyber security challenges in Nigeria and to generate a number of papers for publication.

It dwells on ongoing research problem on: FALANGID: Farmland Geofencing, Intrusion Detection, and Animal Tracking System. It is aimed at contributing to the solution to the farmers – herders problem in Nigeria.

Research Oriented Course (ROC) in Quantum Mechanics and Its Applications to Physical Problems

Held form 8-20 December, 2024, this course was a two-week Research Based Activity targeted at the previously trained Participants with requisite knowledge of the course. This course is a follow up on an activity carried out by the Theoretical Physics Programme during the Foundation Postgraduate Course in Quantum Mechanics in year 2023 and at ensuring that the course is carried to its full term.

Expectations: Participants during and after this programme should be thoroughly equipped with research skills. Research papers are also expected after the course.

Outcomes: Researchers were exposed to different analytical techniques for solving the Schrodinger equation. These techniques include the Nikiforov-Uvarov method, asymptomatic iteration method and the NUFA method. Furthermore, participants were also armed with computational techniques in order to carry out further analysis having carried out rigorous theoretical work. Softwares like Mathematica and Maple were used for step by step hands on practice so as to help the participants have first-hand knowledge in the application of the soft wares.

The high point of the research oriented course was the interaction of the participants with potential models for active research work, Potentials like the Manning –Rosen, Deng – Fan, Deformed wood-Saxon Mobius Square amongst others were deployed for intensive research work by the various research groups that were formed.

The targets for the resulting papers generated from this course are Q1 journals due to the quality of the work that was carried out.

Other remarkable undertakings

The International Day of Mathematics, IDM (Pi-day) on 14 March, 2024 was organised in the National Mathematical Centre (NMC), Abuja. The theme for the year was "Playing with Math". Mathematics is crucial to technology development which is central to human wellbeing. The events which took place at NMC were to raise awareness on the importance of Mathematics in day-to-day activities. The activities to mark the day included a press conference and Math walk among others.

COMSATS University Islamabad (CUI), Pakistan

COMSATS University Islamabad is a public university established in year 1998 as (formerly) COMSATS Institute of Information Technology – flagship project of the Commission of Science and Technology for Sustainable Development in the South (COMSATS). The University has now grown exponentially with seven physical campuses with a student's body of over 36,165 students including 210+ International students, teaching faculty of 1,964 (including 1,066 Ph.D.) and offering 116 programmes in 23 academic departments at undergraduate and postgraduate level.

Major Research activities / Research initiatives

CUI is dedicated to the advancement of learning and extending the frontiers of knowledge. Its mission supports and promotes knowledge creation in academically diverse disciplines and to the application of this knowledge to benefit the people.

In the year 2024, a total of 2571 impact factor publications have been recorded in national/international journals by the faculty of CUI. In addition, total submitted research projects during the year 2024 (Jan-Dec) are 37 while total approved projects during the same period are 19 with worth of Rs 96.36 Million.

In Financial Year 2023-24, 281 proposals were received from CUI Faculty members against CUI Research Grant Program (CRGP), wherein 35 proposals were approved for funding upto 300,000/-.

Patents:

As we move towards creating a knowledge economy, developing an understanding of Intellectual Property Rights is of paramount importance to protect inventor's rights and produce research that will fuel innovation and commercialization. CUI has developed in-house capacity to provide IP support to its researchers and file patent applications locally and internationally.

	Pakistan	European Patent Office	Total
Patents Filed	66	48	114
Patents Granted	22	24	46

Capacity building Activities

The COMSATS University Islamabad firmly believes that sharing of information among students and faculty members and robust interaction with universities and organizations abroad enhances qualitative and improved learning. Based on this philosophy, the Office of Research Innovation and Commercialization (ORIC), has a Business Incubation Center.

The Business Incubation Centre (BIC) organized a workshop titled: "'Importance of Industry-Academia Entrepreneurship" on November 22,2024 at SSBC/BIC Building.

The session was conducted by Mr. Salman Qaisrani, who is a notable mentor and public speaker with more than 38 years of hands-on experience as a true "hybrid" and an effective "change agent. The event was attended by faculty members and students from various Departments of CUI.

Human Resource Development Program of CUI

Investing in human resources, more precisely in the faculty and staff under the Human Resource Development Program (HRD) has been a flagship initiative at the





Prof. Dr. Sajid Qamar
Rector
COMSATS University Islamabad (CUI), Pakistan

COMSATS University Islamabad (CUI) proudly recognizes its longstanding relationship with the COMSATS Secretariat as a cornerstone in advancing academic innovation and societal well-being. CUI has established itself as a dynamic member of the COMSATS Network by fostering initiatives that bridge academia and industry.

CUI's partnership with COMSATS has been vital in expanding the university's capabilities in cutting-edge fields, thereby broadening its influence and impact. With a global perspective, we actively collaborate with prominent international organizations such as the Association of Commonwealth Universities (ACU), TWAS, D-8 Secretariat, ICESCO, and COMSATS. These alliances promote academic diversity, foster relationships with nations across the Global South, and enhance the university's standing in the international academic community.

To further this vision, CUI extends a warm invitation to Member States of COMSATS to benefit from its flagship initiative: the offering of 100 postgraduate scholarships. This initiative underscores our commitment to cultivating partnerships that drive sustainable development and align with the United Nations Sustainable Development Goals (SDGs).

CUI actively fosters regional collaboration and global engagement through faculty and student exchanges, joint research projects, and specialized training programs. These initiatives enhance cultural understanding, address shared challenges, and promote sustainable development among countries of the South. Our research focuses on critical areas such as biomaterials, climate change resilience, renewable energy, sustainable technologies, data analytics, and artificial intelligence, with a commitment to delivering tangible benefits to communities in our region.

CUI frequently hosts international conferences, symposia, and forums, creating platforms for experts, scholars, and policymakers from Member States to collaborate and share expertise. These events facilitate the exchange of innovative ideas and joint efforts toward addressing global priorities and achieving a sustainable future, giving perspective on local challenges.

We extend our heartfelt gratitude to the COMSATS Secretariat, our esteemed partners, and the Network of Centers of Excellence for their unwavering dedication. Together, we look forward to accelerating progress, fostering innovation, and achieving a brighter future for all.

COMSATS University Islamabad (CUI). The CUI is running one of the largest HRD Programs among the public and private sector universities in Pakistan second only to the one run by Higher Education Commission (HEC). The Directorate of Planning, Development and Human Resource Development (P, D and HRD) has been entrusted with the responsibility to administer the CUI HRD Program. Under the auspices of the HRD Program, CUI has invested generously in human resource development and provided opportunities to its faculty in universities abroad to pursue MS and PhD level studies. During the preceding decade and half, over three hundred and sixty (360) fully funded scholarships have been awarded to the faculty/staff to allow them pursuing studies in high-ranking universities of the world. Among them nearly 160 MS and over 200 PhD scholars have successfully completed studies. These scholarships were awarded through meritorious criteria, open to candidates already serving or willing to serve CUI upon completion of studies.

Complementing its own investment in HRD program, faculty/staff are encouraged to secure scholarship funding from alternate sources. Necessary facilitation is provided to the faculty/staff, including but not limited to granting them ex-Pakistan leave. Alternate sources include those arranged under institutional arrangements agreed between the CUI and other universities and funding agencies. The cohort benefiting from such



facilitation comprises of over 750 scholars. Among them, nearly 360 scholars have completed their studies while over 400 scholars are pursuing their studies abroad. During the year 2023-24, 13 scholars have joined back the CUI.

CUI proudly boasts of having an excellent intellectual ensemble of around 1100 PhDs in its faculty/staff corps. As part of preparing candidates to be able to compete for the overseas scholarships, the Directorate of P, D and HRD initiated a program entitled, "Information Seminars for Higher Studies Abroad" in 2016. Under the program series of information & motivational seminars/meetings are conducted for the prospective candidates. More than eighty such events have been organized as of now.

Faculty Development Academy (FDA) Activities

The Faculty Development Academy (FDA) at COMSATS University Islamabad organized a comprehensive series of professional development programs and training sessions throughout 2024. These initiatives were designed to enhance the skills, knowledge, and capabilities of the university's faculty and staff across various areas, ranging from financial management to climate policy. The year saw a diverse range of activities, including one-day training programs, panel discussions, and a series of Summer Training Programs



across multiple campuses. The following outlines the key training sessions and events held during the reporting period.

International Collaborations

Foreign Academic Linkages

COMSATS University Islamabad (CUI), as a flagship project and Center of Excellence of the Commission, remains resolutely dedicated to establishing strategic international academic partnerships with world-renowned universities, organizations, and research institutions.

These collaborations are aligned with the University's global vision, aiming to enhance its academic stature and influence on the international stage. A total of nine (09) collaboration agreements have been successfully signed with the following distinguished universities and institutions:

1. University of Regina, Canada
2. Xidian University, China
3. D-8 International University, Iran
4. University of Naples, Federico II, Italy
5. Digital Cooperation Organization, Saudi Arabia
6. Usak University, Türkiye
7. University of Glasgow, United Kingdom
8. Belgorod State Technological University named after V.G.Shukhov, Russia
9. Pushkin State Russian Language Institute, Russia

International Mobility Programme

Exchanges/Mobilities Availed

At COMSATS University Islamabad (CUI), we believe that international experiences are crucial for the holistic development of our students, faculty, and

S #	Training/Workshop Title	Date
1.	One-day Training on Financial Management & Managing Regulatory Risks	January 25, 2024
2.	One day Training on Modern Human Resource Management: Appraising Intrinsic Worth & Evaluation	February 1, 2024
3.	Panel Discussion on Strengthening Climate Policy & Governance" Lessons from COP28 and the Path to COP29	March 7, 2024
4.	Summer Training Program - 2024, CUI Attock Campus	July 29, 2024
5.	Summer Training Program - 2024, CUI Wah Campus	July 30, 2024
6.	Summer Training Program - 2024, CUI Abbottabad Campus	August 1, 2024
7.	Summer Training Program 2024, CUI Vehari Campus	August 5, 2024
8.	Summer Training Program 2024, CUI Sahiwal Campus	August 6, 2024
9.	Summer Training Program 2024, CUI Principal Seat, Islamabad Campus and Virtual Campus	August 19-21, 2024
10.	Summer Training Program 2024, CUI Lahore Campus	August 26-27, 2024
11.	Professional Development Training Program to Enhance Communication Skills for employees of Principal Seat, Islamabad Campus and Virtual Campus	December 18, 2024





staff. We actively foster a vibrant culture of mobility, providing opportunities for academic growth, cultural enrichment, and invaluable global connections.

Empowering Students through Global Exchanges

The International Office diligently works to cultivate partnerships with esteemed universities worldwide, facilitating student exchange programs that enrich academic pursuits and broaden horizons. In 2024, we achieved significant milestones in our mobility initiatives, securing five prestigious student exchange opportunities under zero-grant programs:

- Three exceptional students from the BS Computer Science program and BS Architecture embarked on enriching academic journeys at the renowned Middle East Technical University in Turkiye.
- Two promising students from the BS Computer Science and BS Management Science programs successfully secured placements at Ajman University in the UAE.

International students

During the reporting period, a total of 38 international students joined CUI in undergraduate and postgraduate programs from 10 different countries mainly from Afghanistan, Jordan, Palestine, Qatar, Somalia, Sri Lanka, Kenya, and Yemen. etc. Most of these students are enrolled in Electrical Engineering, Mathematics, Meteorology, Management Sciences, Physics, Pharmacy, Environmental Sciences and Bio-sciences departments.

Further around 50 international students graduated during the said period. Admission was offered to these students in different undergraduate, graduate and postdoctoral programs under CUI's admission program for international students as well as under various scholarships programs in association with Association of Commonwealth Universities (ACU) for Queen Elizabeth Commonwealth Scholarship programs, The world Academy of Sciences (TWAS) for CUI-TWAS fellowship programs and Higher Education Commission (HEC) Pakistan, different scholarships programs which includes Allama Muhammad Iqbal Scholarship program for Afghan Students, HEC Scholarship program for Sri-Lankan students and HEC scholarship program of Least Developed Countries (LDC) of Organization of Islamic Countries (OIC).

For admission procedure, scholarship information and application submission please visit: http://ww2.comsats.edu.pk/internationalstudents/

Latest Statistics

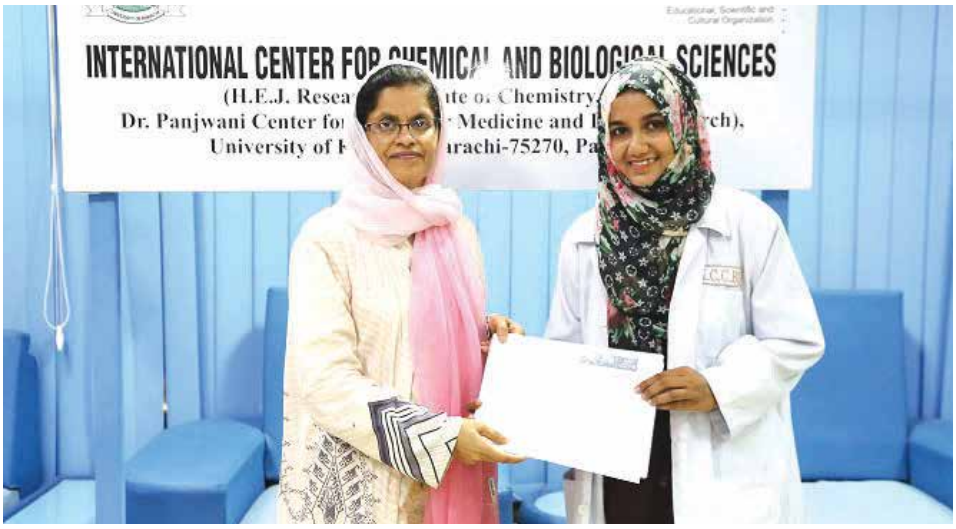
The following statistical data represents the growth of CUI during the year 2024.

Students	36,165
Graduates	107,100+
Faculty	1964 including 1066+ PhDs
Staff	2974
Departments	23
Progammes	116
Impact factor publications recorded in national/ international journals by the faculty of CUI	2571

International Center for Chemical and Biological Sciences (ICCBS), Pakistan

One of the leading academic research institutions in Pakistan with a strong international standing, the International Center for Chemical and Biological Sciences (ICCBS) serves as the Centre of Excellence of COMSATS, TWAS, WAITRO, OIC and UNCSTD. Established in 1966, the Centre has also been serving as a UNESCO Category II institution since 2015.

Recently, UNESCO Chair on 'Medicinal and Bio-organic Natural Product Chemistry' has been established at ICCBS.



Capacity Building

ICCBS Events on DNA Analysis and Oral Cancer

The Sindh Forensic DNA and Serology Laboratory (SFDL) at the International Center for Chemical and Biological Sciences (ICCBS), University of Karachi, organized a one-day training session for investigation officers (IOs). A total of 30 police officials from the Police Investigation Department participated. The officials were given hands-on training at the mock crime scenes. This training session was held to improve the skills of the police personnel regarding the collection of evidence and forensic investigation.

The participants of the training session also paid a visit to Sindh Forensic DNA and Serology Laboratory. In the end, the participants were conferred with certificates.

DIG Admin Sindh Police Imran Yaqub had also visited the Sindh Forensic DNA and Serology Laboratory (SFDL) and the Industrial Analytical Center (IAC) at ICCBS and appreciated both Centers' scope and quality of work.

In her speech, Director ICCBS, Prof. Farzana Shaheen stressed the need for close coordination between different stakeholders to benefit from the world-class forensic facilities established at the ICCBS.

SFDL and the IAC have the capacity to carry out analysis in the full spectrum of forensic DNA and serology, foods, drugs, narcotics, toxicology, and traces, etc. as required in the investigation. The DIG Admin had been briefed about the initiatives of the Sindh Police to build an integrated mechanism to streamline the sample submission and reporting in cases where forensic analysis is required.

A public awareness lecture on "Oral Cancer and Dental Health" held at L.E.J. National Science Information Center at ICCBS. The public awareness lecture was mutually organized by the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD)- ICCBS and the Sindh Innovation Research, and Education Network (SIREN). The lecture was delivered by Prof. Dr. Shahjahan Katpar, Maxillofacial Surgeon and former Dean of the Faculty of Dentistry at Dow University of Health Sciences.

Prof. Shahjahan said that early detection in the treatment of oral cancer, and oral cancer screening were crucial, as mouth cancer could strike in several places, including the lips, tongue, gums, and cheeks.

The prevalence of oral cancer is higher worldwide as more than 377,700 cases were reported in 2020. Prof. Shahjahan pointed out that the prevalence of the disease required the government to set up oral cancer hospitals separately in the country.

Based on ICCBS, SFDL and IAC, a possibility is being explored for an MoU between Sindh Home Department and ICCBS, for the establishment and operationalization of the Sindh Forensic Science Laboratory.

Workshop on Echocardiography Addresses Urgent Need for Enhanced Cardiac Care in Pakistan

Workshop on echocardiography at the Stem Cell Research Laboratory of the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD) of International Center for Chemical and Biological Sciences (ICCBS) focused on the urgent need for improved cardiac care in Pakistan. The World Health Organization reported that the country experienced 240,720 deaths from heart attacks in 2020, highlighting the necessity for advanced diagnostic techniques.

The workshop aimed to enhance understanding and application of echocardiography, a critical ultrasound method for assessing heart function. Clinicians, researchers, and technologists convened to discuss the alarming rise in cardiovascular diseases (CVDs), which accounted for approximately 17.9 million deaths globally in 2019, predominantly due to heart attacks and strokes.

Experts underscored echocardiography's vital role in diagnosing and managing cardiac disorders, emphasizing its importance for timely medical interventions. The event concluded with a strong call for ongoing collaboration between clinicians and researchers to effectively tackle the growing challenge of CVDs in the country.

In a complementary initiative, the Vice Chancellor of Karachi University stressed the need to leverage scientific research to combat prevalent health issues such as diabetes and cardiovascular diseases. This was part of the inaugural ceremony for the International Conference on "Pharmacology & Allied Sciences," organized by the ICCBS, which aims to address critical health challenges and promote international collaboration among researchers.

Participants examined initiatives such as reusing raw materials, improving resource efficiency, and adopting sustainable procurement. They also discussed barriers like limited incentives, knowledge gaps, and low public awareness of circular economy benefits.

These workshops are part of RSS's initiative to develop a National Circular Economy Roadmap under the Green Action in Industries (GAIN) project, aligning with the Royal vision for economic modernization.

Science Day Observed at ICCBS-Pakistan

The International Centre for Chemical and Biological Sciences (ICCBS) celebrated Science Day to inspire and motivate students to become the next generation of scientists and thinkers.

The event acknowledged the achievements of young scholars and their mentors with certificates of appreciation. Participants were briefed on the Centre's research productivity, which led to the graduation of 83 M.Phil and Ph.D scholars in 2024, showing the highest research and academic productivity over the last 10 years. Students from various research fields, including chemistry and molecular medicine, presented e-posters highlighting their findings and accomplishments.



The inaugural ceremony featured a special lecture titled "Amazing Developments in Science" by Prof. Dr. Atta-ur-Rahman, former Federal Minister for Science and Technology. The event also included addresses by Prof. Dr. Farzana Shaheen, Director of ICCBS; Prof. Dr. Syed Ghulam Musharraf; and Dr. Imran Malik.

Prof. Farzana Shaheen expressed her pride in the young scholars, calling them the "real assets" of ICCBS. She commended their outstanding research productivity over the past year and congratulated the students who recently completed their higher degrees.

The day was jointly organized by the ICCBS, and the American Chemical Society (ACS), Pakistan Chapter.



Collaborations

SFA-Sindh Government (Pakistan) Signs Agreements with ICCBS-Pakistan

Sindh Food Authority (SFA), Government of Sindh, has signed two Memoranda of Agreement (MoA) with the International Center for Chemical and Biological Sciences (ICCBS), Pakistan – Halal Certification Testing and Research Services (HCTRS) and the Industrial Analytical Center (IAC), International Center for Chemical and Biological Sciences (ICCBS).

These MoA aim to create a long-term framework of collaboration, cooperation, and development of a strong linkage between SFA and the research centers of the ICCBS for the testing of food products, which is in the interest of both institutions. The SFA Director General Agha Fakhar Hussain and Prof. Dr. Farzana Shaheen, the Director of the ICCBS, University of Karachi, signed the agreement in a meeting held at the HEJ Research Institute of Chemistry, ICCBS.

Halal Testing Laboratory works to standardize and uplift the high-quality standard of nutrition & hygiene in Halal-certified food & other products by international export quality standards. The IAC is working to meeting testing



requirements with integrity, reliability, accuracy, precision of data, and timeliness of reports to achieve customer satisfaction and define specifications in compliance with ISO/IEC Laboratory Accreditation System and ISO 9001Quality Management System.

German Scientists Seek Collaboration with ICCBS

A delegation of German scientists, led by Prof. Dr. Thomas Iftner, Director of the Institute of Medical Virology and Epidemiology of Viral Diseases at the University Hospital of Tübingen, Germany, visited the International Center for Chemical and Biological Sciences (ICCBS).

The German delegation met with Prof. Dr. Farzana Shaheen, Director ICCBS, and other scientists at ICCBS. Attendees included several key officials and faculty members of the National Institute of Virology and Dr. Panjwani Center for Molecular Medicine and Drug Research.

During the meeting, Prof. Dr. Farzana Shaheen gave a detailed presentation on the center's extensive scientific and research activities. She highlighted potential areas for collaboration, particularly in virology research.

The German scientists also visited various research facilities at the ICCBS and met with faculty members and research students. Prof. Dr. Daniel Sauter delivered key lectures on "Prion Diseases" and "The Origins and Evolution of Emerging Viruses," further enriching the academic environment.

ICCBS Signs MoU with Aga Khan University Hospital

ICCBS-Pakistan has signed a Memorandum of Understanding (MoU) with the Aga Khan University Hospital and Medical College Foundation.

The MoU aims to establish collaboration in the field of Artificial Intelligence (AI), with a focus on applications in healthcare and related areas.

The agreement was signed by Prof. Dr. Farzana Shaheen, Director of ICCBS, and Prof. Dr. Syed Ather Enam, Professor of Neurosurgery and Director of the Centre for Regenerative Medicine and Stem Cell Research at the Aga Khan University Hospital, during a meeting held at the Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi.

The two institutions have agreed to collaborate on joint research programs, co-author scholarly publications, share health and clinical research data, and develop technology-based healthcare solutions. The MoU also includes provisions for exchanging scholars, faculty members, and postdoctoral fellows.

Awards and Honors

ICCBS-Pakistan Professor Wins 37th Khwarizmi International Award

Prof. Dr. Raza Shah, the Senior Professor at the International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, has won the 37th Khwarizmi International Award (KIA) in Biological and Chemical Sciences.



Prof. Raza Shah received the trophy, certificate, and cash prize of 20,000 USD by the President of the Islamic Republic of Iran at the 37th KIA Award Ceremony in Tehran. These awards have been announced by the Iranian Ministry of Science, Research and Technology, and Iranian Research Organization for Science and Technology (IROST) to recognize the valuable achievements of the researchers, innovators, and inventors in the field of Science and Technology.

PCMD-ICCBS-Pakistan Scientist Elected as PAS Fellow

The Pakistan Academy of Sciences (PAS) has elected Dr. Zaheer-Ul-Haq, a Professor at the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD), ICCBS, as a fellow of the Pakistan Academy of Sciences (PAS). Only scientists of the highest merit, who have made



outstanding contributions to advancing scientific knowledge, are elected fellows. PAS promotes higher studies and research on pure and applied sciences in Pakistan and disseminates scientific knowledge.

ICCBS Scientists Recognized by Royal Society of Chemistry and Chemical Society of Pakistan

The Royal Society of Chemistry (RSC), the United Kingdom, has selected Prof. Dr. Syed Ghulam Musharraf, a well-known Pakistani scientist in mass spectrometry, as a Fellow of the Royal Society of Chemistry (FRSC). Dr. Musharraf, a professor at the HEJ Research Institute of Chemistry, ICCBS. The RSC selected Prof. Musharraf in recognition of his extensive services in chemical sciences. Prof. Musharraf, inter alia, made significant and promising contributions to establishing a modern mass spectrometry research laboratory in Pakistan.

Prof. Dr. M. Raza Shah, Professor at the ICCBS has been elected unopposed President of the Chemical Society of Pakistan (CSP). Prof. Shah was also recently appointed as a member of the Expert Advisory Committee, WHO International Traditional Medicine Clinical Trial Registry. It is also worth mentioning that Prof. Raza Shah has recently received the Iranian Khwarizmi International Award from the Ministry of Science, and Research Technology of Iran and became the Khwarizmi International Laureate.

TWAS elected ICCBS-Pakistan Professor as a Fellow

Prof. Dr. M. Raza Shah, a senior Professor at ICCBS, University of Karachi, has been elected as a Fellow of The World Academy of Sciences (TWAS), Italy.

Prof. Shah has been honored with this prestigious fellowship in recognition of his outstanding contributions to Nanomedicine and Supramolecular Chemistry.

It is noteworthy that Prof. Shah was recently appointed as a member of the Expert Advisory Committee of the WHO International Traditional Medicine Clinical Trial Registry. Additionally, he received the Iranian Khwarizmi International Award from the Ministry of Science, Research, and Technology of Iran, earning the prestigious title of Khwarizmi International Laureate.

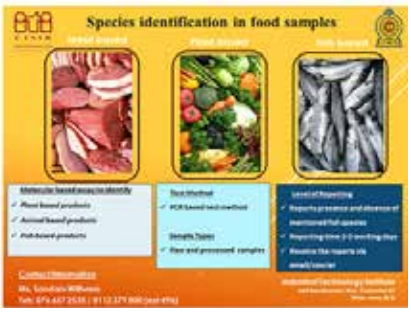
Industrial Technology Institute (ITI), Sri Lanka

Established in 1955, the Industrial Technology Institute (ITI) comprises of research and development divisions, and technical services divisions.

The Institute conducts multidisciplinary scientific and industrial research on technology-transfer for rapid industrial development.

Technologies Developed/Transferred

- New 21 test methods were developed by the Pharmaceutical Laboratory (quantification of parabens by LC-MS, presence or absence of parabens by TLC, presence or absence of formaldehyde in creams, disintegration time of herbal capsules, hardness of herbal tablets, friability of herbal tablets, disintegration time of non-herbal capsules, detection of collagen in supplements by FTIR, lather volume in soap, Analysis of saturated aldehydes by LC/MS method, Determination of non-ionic detergent content in shampoo by UV spectroscopic method, quantification of thymol content in creams by HPLC), FTIR identification of Metformin - BP, FTIR identification of Aspirin – BP, FTIR identification of Losartan – BP, Uniformity of weight of tablets and capsules, Average weight and weight variation of herbal tablets, Average weight and weight variation of herbal capsules, Diameter for of tablets, Diameter of hard gelatin capsules and Thickness of tablets).
- Development of Molecular-based PCR method for identification of animal contamination in plant-based products: The method was developed under a requested made by a customer for export market. A report stating that the plant-based product that is being exported, is not contaminated with any animal matter and contain only plant materiel was requested by the imported country. Customer was unable to export the developed product without this certification. This could only be tested using a genetic method. Hence, a PCR based method to identify animal contamination was developed to aid this export market.
-
- Technology transfer of mass scale production of Graphite Oxide (GO)
- Technology transfer of Glass cleaner, Hand wash, Air freshener, Tile cleaner, Toilet cleaner, Dish wash, soap and laundry detergents to low-income people to uplift their status of life.
- Technology transfer of air freshener gel to start up a business for the export market
- KASPER production and distribution to IDB as a social upliftment to the rural population. Number of bottles provided to IDB was 6000 bottles.
- Pengiri essential oil liquid vaporizer
- Varnish from Cashew nut shell liquid (CNSL)
- Technology for graphite-clay composite electrode
- Technology of preparing legume-based meat analogue
- HTS launched its very first product "Cinnamon Life at City of Dreams" at its opening as a natural perfume
- Mouth wash spray with cinnamon oil
- Mouth wash with cinnamon oil
- Surface cleaner with cinnamon oil
- Mosquito-repellent cinnamon oil-based fragrance







- Cinnamon air-freshener (Cinnamon fragrance oil in slow-release material)
- Cinnamon charcoal
- Herbal whitening serum
- African butter jam (Pentadesma butyracea)
- African butter candy (Pentadesma butyracea)
- African butter fruit leather (Pentadesma butyracea)
- African butter sauce (Pentadesma butyracea)
- Mee oil balm (Madhuca longifolia)
- Pengiri mosquito repellant (Ceylon Citronella)
- Cosmetic technology-soap
- Cosmetic technology-shampoo
- Cosmetic technology-hair gel
- Aloe vera shampoo
- Hair dying oil
- Sea Moss Gel (Eucheuma cottonii)
- Isotonic Nas Narang (Citrus madurensis) Sports Drink

Major Research Activities/New Initiatives

Some of the major research activities / new initiatives

- Postharvest Losses, Food Safety and Value Chain of Fruit and Vegetables for Sustainable, Healthy Diets Initiative in Sri Lanka/University of Sydney.
- Histopathological and immunological effects of marine microplastics on pelagic seabirds within our EEZ.
- Purification of graphite as value addition.
- Design of production process equipment and wastewater treatment plant for Graphene production process.
- A stable composite based on titanium dioxide and clay as an effective photocatalyst for wastewater treatment.
- Modification of MTS clay water filter to suppress harmful bacteria activity and other contaminants including fluoride and heavy metals in drinking water.
- Further development of red clay based superior quality cookware.
- Design and Fabrication of a Water Ionizer.
- Expanding Ceylon Cinnamon Exports via Research, Development & Innovation for quality improvement.
- Development of immunity boosting products incorporating Sri Lanka medicinal plants to prevent infectious diseases.
- Development of herbal-based health supplements for anti-inflammatory Diseases
- Development of value-added food and cosmetic products from Pentadesma butyracea (African butter tree) fruits and butter
- Fractional distillation of endemic resin oils and wild cinnamon under reduced pressure, evaluating chemical composition, bioactivity, and value-added potential
- Development and characterization ready to serve drink by using noni fruit
- Worldwide Commodities Caffeine Analysis. (Ongoing)
- Preparation of alcoholic vanilla extract.
- Development of Perfume (Ongoing)
- Investigation on oxidation stability of γ-oryzanols and formation of hazardous compounds during the frying of rice (Oryza sativa)
- Enhancing the Effectiveness of the Drug Delivery in Herbal Tablets and Maximizing the Bioavailability of their Active Herbal Compounds using Natural Excipients
- Studies in surface sterilization of spices using non-thermal process under Indo Sri Lanka Joint Research Program - 2017
- Development of Nutritious and Healthy Food Corners for the Children/ Adolescences
- Development of a database on nutritional, chemical, molecular and morphological characteristics of selected traditional and widely consuming improved rice varieties of Sri Lanka: suitability to use as chemical and molecular finger prints in identifying rice varieties at grain level
- Spray drying of selected fruits, vegetable juices and yam pulps and innovative spray dried powder-based products and development
- Development of technologies to utilize waste whey in local dairy bio-processing industries for the production of value-added/functional beverages
- Traceability study of organic residual contaminants in dairy supply chain, risks and opportunity assessment and dilating dairy product testing facilities at ITI
- Vegetarian food products containing non-synthetic additives processed using less preferred local vegetables






- Utilization of selected underutilized and popular root/tuber crops grown in Sri Lanka to formulate healthy and novel food products and food ingredients aiming local and international market
- Development of milk/grain functional beverages and food supplements
- Establishment of inactivation kinetics for potential harmful microorganisms associated with thermal processing of king coconut water and coconut milk
- Development of novel juice extraction techniques for high quality extracts from underutilized Agro-based commodities, extract based fermented/ powder products
- Formulating meat analogues and plant-based meat products using plant proteins and mycoproteins
- Optimization of processing parameters of pilot scale vacuum drying for selected perishable food commodities with organic and non-organic pretreatments.
- Enhancement of Iron bio-availability in some Rice Grains of Selected Rice Varieties and Development of Nutritious Grain based Products with High Iron Bio availability.
- Food Safety Risks Assessment, Analysis, and Development of Strategies for Overcoming Challenges in the Ceylon Spice Industry.
- Indigenous and medicinal mushrooms in Sri Lanka and mushroom based functional products development
- Prototype development to purify waste whey produced in local dairy bio-processing industries for value-addition
- Development and optimization of technologies to produce non-dairy milk-based products with value-added/ /functional properties as alternates for traditional/imported dairy products
- Formulation of meat and dairy substitutes for vegan consumers using locally available pulses, agricultural by products and mycoproteins
- Expanding Ceylon Cinnamon Exports via Research Development and Innovation for Quality Improvement
- Cloning and expression of Laccase gene from microbial sources for industrial dye decolorization
- Development of a field usable Lateral Flow Immunoassay for rapid detection of White Spot Syndrome Virus (WSSV) in shrimp.
- Development of Molecular based test method for detect palm olein detection in infant formula.
- Molecular Identification of Pumpkin (Cucurbita spp.) Species & Varieties in Sri Lanka to Introduce Good Quality Pumpkin Varieties for the Food & Agriculture Industry

Capacity-Building Activities	
Completed MSc	04 staff members
Ongoing PhD	05 staff members
Ongoing MSc	10 staff members
Overseas Training	04 staff members
Local Training	23 staff members

International Collaborations and Agreements

1. Title of the Project: Expanding Ceylon Cinnamon Exports via Research, Development & Innovation for quality improvement
2. International Project Concept Proposal Submission: Based on the project background a concept proposal has been submitted to KOIKA via Ministry of Policy Planning titled "Climate Change mitigation, adaptation and promotion of environment sustainability and promote Green Economy via Cluster -based Value Chain Development of Non-Timber Forest Products and Underutilized Fruit Crops, herbs and veggies using 4P Model"
3. Title of the Project: Expanding Ceylon Cinnamon Exports via Research Development and Innovation for Quality Improvement (initiated in Aug. 2022).
4. Agreement for training programmes: Initiated training programme with Edith Cowan University (ECU), Sri Lanka branch. An Agreement for student internship training programmes were signed with the officials of the ECU on August 2024.
5. Delegates of AFOB who linked with Sang Mung University, Soth Korea to ITI: Recognizing the potential of establishing an AFOB chapter and promoting activities in Sri Lanka, and expanding Food Technology Area under this project, two distinguished AFOB delegates who have link with Sang Mung University, South Korea visited ITI for a shot initial during 16th to 18th July 2024. This visit was critically helped to exchange international experience to improve extraction technologies thereby value addition and to facilitate AFOB Chapter in Sri Lanka during 2026.

Other Activities at ITI

ITI to Provide Consultancy to Colombo Dockyard PLC

The Industrial Technology Institute (ITI) has been awarded a contract by Colombo Dockyard PLC for noise and vibration



measurement and analysis on dry bulk cargo carriers built for a Norwegian owner. These vessels are designed with eco-friendly technologies, powered by a four-stroke diesel engine and an electric hybrid system, in line with IMO and ISO standards for seafarer comfort. ITI will conduct final surveys to ensure compliance, and their report has been accepted by DNV AS Ship Classification (Norway), marking the first time their report has been approved by a European country. ITI has a strong history of similar work, having provided services to multiple countries, including Japan and Singapore. The vessels were delivered in September 2024.

Trainings at ITI

ITI arranged the following trainings during the reporting period:

- "Awareness of ITI testing services, Good Manufacturing Practices, Packaging and Labelling of Products" 19th September 2024.
- A 3-day training programme for the Faculty of Technology at the University of Rajarata, organized by the Information Services Centre (ISC) of ITI. As a newly opened faculty, they need training on "Laboratory safety and waste disposal". The training included First aid and Firefighting activities as well.– 30,31 October and 1 November 2024.

The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye

Established in 1963, the Scientific and Technological Research Council of Türkiye (TÜBİTAK) became COMSATS Centre of Excellence in 2019 in lieu of its Centre – TÜBITAK Marmara Research Centre (MAM). TÜBİTAK is an autonomous institution of the Prime Ministry. TÜBİTAK has the stated goal to develop science, technology and innovation (ST&I) policies, as well as support and conduct research and development.

TÜBİTAK remains a key institution in supporting the global transformation process and driving force behind science and technology. It plays a leading role in the RDI (Research, Development, and Innovation) ecosystem, supporting Türkiye's 2022 goals. With a strategic approach of "working and succeeding together", focused on co-creation and new knowledge generation, TÜBİTAK fosters innovative solutions for sustainable development. This approach considers global risks, challenges, opportunities, as well as national needs and priorities.

The year 2024 has been a landmark year for the Scientific and Technological Research Council of Türkiye (TÜBİTAK), marked by pioneering achievements in science and technology. In 2024, TÜBİTAK celebrated its 61st anniversary while raising young human resources, supporting researchers and scientists in the R&D and innovation ecosystem, and addressing challenges. Through the years and since its inception, TÜBİTAK has spearheaded scientific research and strengthened Türkiye's technological independence with innovative projects. This year, the organization has demonstrated visionary leadership and determination, achieving significant success on both national and international fronts.

The Twelfth Development Plan of Türkiye for the years 2024-2028 puts forth the vision of being "a stable, strong and prosperous Türkiye that is environmentally friendly, resilient to disasters, produces high value with advanced technology and shares income fairly in the Century of Türkiye." The R&D and innovation ecosystem will shape the pathway of realizing this clear vision. In this scope, TÜBİTAK is taking leading steps in guiding this direction as an innovative, direction-setting, and cooperating institution working





Prof. Dr. Orhan AYDIN
President
The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye

The Scientific and Technological Research Council of Türkiye (TÜBİTAK) has a key role in mobilizing the R&D and innovation ecosystem to succeed in addressing important challenges collectively. This includes the need to address climate change, ensure a sustainable and healthy environment, increase resource efficiency, and advance societal wellbeing and security.

This responsibility leads to an encompassing vision where we streamline strategic approaches for strengthening our support for new advances at the national and international levels. The Twelfth Development Plan of Türkiye for the year 2024-2028 puts forth the vision of being "a stable, strong and prosperous Türkiye that is environmentally friendly, resilient to disasters, produces high value with advanced technology and shares income fairly in the Century of Türkiye." The R&D and innovation ecosystem will shape the pathway of realizing this clear vision and TÜBİTAK is taking leading steps in guiding this direction domestically and beyond.

As an innovative, direction-setting, and cooperating institution working together with and guiding the R&D and innovation ecosystem, TÜBİTAK has also continued onward in being a pioneering institution in the 61st anniversary year. As Türkiye takes determined steps in the scope of a green and digital transition towards the net-zero emissions target for the year 2053, TÜBİTAK is ensuring the mobilization of the R&D and innovation ecosystem for this target in the context of sustainable development. Through this vision, new opportunities and synergies are created for producing more sustainable, resilient, competitive, and efficient impacts.

With our numerous research centers and institutes from informatics and information security, space technologies, rail transport technologies, defense industries, metrology, supercomputing and academic networks, industrial management, fundamental sciences, and space observation to test laboratories, TÜBİTAK is advancing new groundbreaking achievements in science and technology. Key highlights for 2024 include the successful deployment of Türkiye's first domestically produced communications satellite, TÜRKSAT 6A, solidifying Türkiye's independence in space research. Meanwhile, groundbreaking milestones in human spaceflight were achieved with Alper Gezeravcı's experiments aboard the International Space Station and Tuva Cihangir Atasever's suborbital flight, heralding a new era in space exploration efforts.

This Annual Report for 2024 highlights the advances of TÜBİTAK and collaboration opportunities with The Commission on Science and Technology for Sustainable Development in the South (COMSATS). We summarize our 2024 activities and underscore our dedication to ongoing scientific and technological cooperation with COMSATS. As TÜBİTAK, we most sincerely look forward to taking these advances forward in the path ahead and working together with COMSATS in the Centres of Excellence Network in developing solutions for a more sustainable, resilient, competitive, and efficient future for all members and humanity.

together with the R&D and innovation ecosystem. From informatics and information security, space technologies, rail transport technologies, defense industries, metrology, supercomputing and academic networks, industrial management, fundamental sciences, and space observation to test laboratories, the pioneering institution of TÜBİTAK is advancing new groundbreaking achievements in science and technology. As Türkiye takes determined steps in the scope of a green and digital transition, TÜBİTAK will create opportunities and synergies for producing more sustainable, resilient, competitive, cutting-edge and efficient impacts for the future.

Key highlights of 2024 include the successful deployment of Türkiye's first domestically produced communications satellite, TÜRKSAT 6A, solidifying Türkiye's independence in space research. Meanwhile, groundbreaking milestones in human spaceflight were achieved with Alper Gezeravcı's experiments aboard the International Space Station (TÜBİATK



(2024) https://tubitak.gov.tr/en/news/turkiyes-first-astronaut-alper-gezeravcis-space-journey-begins) and Tuva Cihangir Atasever's suborbital flight, heralding a new era in Türkiye's space exploration efforts.

TÜBİTAK's international collaborations also flourished. The Horizon Europe program saw Turkish researchers secure €243 million in funding across 486 successful projects, enhancing their global standing. TÜBİTAK's presidency of the EUREKA Cooperation Platform and hosting of the Global Innovation Summit in Istanbul further bolstered Türkiye's influence on the global science and technology stage.

Recognizing scientific excellence, TÜBİTAK awarded seven Science Awards, one Service Award, and 13 Incentive Awards in its 59th annual awards ceremony, honoring researchers and scientists for their contributions.

By expanding the boundaries of research and innovation, TÜBİTAK concluded 2024 with pride, positioning itself as a source of inspiration for researchers and entrepreneurs. With a commitment to scientific leadership, TÜBİTAK continues to shape the future through groundbreaking projects and innovations.

This Report for 2024 highlights these advances and collaboration opportunities with COMSATS, including a strategic approach of working and succeeding together. Moreover, bilateral scientific and technological agreements extended to new countries in 2024, including institutions in two additional COMSATS member countries. At present, TÜBİTAK has active bilateral scientific and technological agreements with 108 institutions across 75 countries.

TÜBİTAK BİLGEM: Advancing Innovations in Technology

As Türkiye's biggest R&D centre, TÜBİTAK Informatics and Information Security Advanced Technologies Research Center (BİLGEM) carries out technological R&D studies that ensure the security, integrity, secure transmission and storage of military and civilian information in order to ensure our country's technological independence in the field of information security and informatics. With more than 50 years of knowledge, experience and 2,000 human resources, the Centre conducts scientific and technological research at international standards.

In 2024, TÜBİTAK BİLGEM achieved significant milestones, including the operational deployment of Türkiye's first domestic civilian surveillance radar, MGR, at Gaziantep Airport. The center supported the development of the KAAN national combat aircraft and received recognition for its research in microwave technology. BİLGEM also excelled in cybersecurity through NATO and CWIX exercises, contributed to tax system modernization with the e-Declaration application, and advanced AI and robotics applications. The numerous competencies of BİLGEM range from cybersecurity to advanced electronic systems. URL: https://bilgem.tubitak.gov.tr/en/

TÜBİTAK MAM: Leadership in Polar Research and Energy

TÜBİTAK Marmara Research Center (MAM) aims to become a global leader in science and technology production with its research, development, and innovation capacity in the fields of Energy Technologies, Climate and Life Sciences, Polar Researches, Materials and Process Technologies. TÜBİTAK MAM is one of the leading organizations in the advanced technology world, with its research infrastructure and globally recognized management and operational process capabilities. In 2024, TÜBİTAK MAM completed the 8th Antarctic and 4th Arctic Science Expeditions and hosted



over 200 scientists at its Polar Science Symposium. Key energy advancements included nationwide deployment of the ATHOM system and export of Power Quality Analyzer devices. Breakthroughs in climate research, biosimilars production, and hydrogen and renewable energy technologies further solidified its pioneering role.

Moreover, sector-specific solutions include those for flexible transmission and compensation systems, electrical power, hydroelectric power plants, renewable energy, air quality, pharmaceuticals and medical devices, security solutions, solutions for naval forces, mining, agricultural applications, food products, recycling and environment, structural materials, advanced energy and fuel combustion/gasification, sea and underwater technologies, underground imaging, and dating, among other technologies and technological products. URL: https://mam.tubitak.gov.tr/en

TÜBİTAK UZAY: Milestones in Space Technologies

TÜBİTAK Space Technologies Research Institute (UZAY) is Türkiye's leading organization in the field of space with its RASAT, GÖKTÜRK-2, İMECE and TURKSAT 6A satellites. TÜBİTAK UZAY has been developing operational satellite systems and subsystems with domestic and national history in this field, in which it has been active for more than 20 years. As key highlights, TÜBİTAK UZAY marked 2024 with Türkiye's first astronaut missions and the launch of the TÜRKSAT 6A satellite. Progress in the Moon Mission and Earth observation satellite projects, along with international participation, highlighted Türkiye's growing role in space technology.

TÜBİTAK RUTE: Innovations in Rail Transport

TÜBİTAK Rail Transportation Technologies Institute (RUTE) is pioneering the transformation of mobility with a vision for R&D collaboration to develop innovative technologies for safer, faster, and more efficient rail transportation technologies. In 2024, TÜBİTAK RUTE advanced Türkiye's rail technology with signaling systems on the Gayrettepe-Kağıthane Metro Line and progress in the Eskişehir5000 domestic train project, achieving a speed of 140 km/h in tests. International collaborations included participation in EU projects and awards in the Hyperloop competition. URL: https://rute.tubitak.gov.tr/en/

TÜBİTAK SAGE: Defense Sector Breakthroughs

TÜBİTAK Defense Industries Research and Development Institute (SAGE) continues its activities with the ideal of providing the defense industry with national technologies, products and services with high added value and competitiveness on a global scale through R&D. In 2024, TÜBİTAK SAGE made strides in defense with successful live-fire tests of GÖKDOĞAN and BOZDOĞAN missiles, and significant advancements in long-range defense systems and indigenous munition technologies. Highlights included the digital twin of jet engines and SFORCE, Türkiye's first Modeling and Simulation Operations Analysis Platform. URL: https://www.sage.tubitak.gov.tr/en/

TÜBİTAK ULAKBİM: Excellence in Academic Networking

TÜBİTAK National Academic Network and Information Center (ULAKBİM) operates a high speed computer network enabling interaction within the research and education elements of the national innovation system, and providing information technology and library and information services to the research community in Türkiye. ULAKBIM aims at providing IT facilities such as computer networks, high performance compute and storage solutions, data and cloud services, and library and information services, to meet the needs of universities and research institutions, and to increase the efficiency and productivity of their users. As key highlights for 2024, TÜBİTAK ULAKBİM launched the ARF supercomputer and improved global connectivity with major upgrades. Achievements included supporting SMEs through EuroCC projects, increasing journal impact factors, and providing open access to over 700,000 articles.

In particular, as a result of the intensive work of the TÜBİTAK ULAKBİM



TRUBA team, the national resource ARF supercomputer has achieved great success in worldwide supercomputer rankings. Accordingly, ARF ranked 230th in the Top500 ranking, 26th in Green500 and 110th in HPCG. ARF ACC has fully liquid-cooled NVIDIA H100 GPU cards and a high-performance new generation file system. Offering brand new perspectives to research in the field of artificial intelligence and data analytics, this system stands out with meticulous work throughout 2024. URL: https://ulakbim.tubitak.gov.tr/en

TÜBİTAK UME: Metrology Leadership

TÜBİTAK National Metrology Institute (UME) aims to ensure the reliability of all measurements conducted in Türkiye, to make provisions for the integration of these measurements into the international system and to develop existing and new measurement technologies, thereby establishing the national measurement system required for ensuring the accuracy of measurements used in commercial and industrial settings and which contributes to equity in national and international trade, increases in the quality of Turkish industrial products and Türkiye's scientific and technological development.

In 2024, TÜBİTAK UME strengthened Türkiye's metrology infrastructure, opened five laboratories in Azerbaijan, and supported regional standards with TURKMET. Collaborations with BIPM and EURAMET further enhanced its global reputation. URL: https://www.ume.tubitak.gov.tr/en

TÜBİTAK TBE: Advancing Scientific Collaboration

TÜBİTAK Basic Sciences Research Institute (TBE) spearheaded key EU-backed projects and collaborations with leading universities, including the University of California, Berkeley. Programs in quantum computing, particle physics, and neuromorphic computing created opportunities for young researchers, supported by the popular "Science Talks" series. URL: https://tbae.tubitak.gov.tr/en

2024: A Landmark Year for TÜBİTAK ARDEB

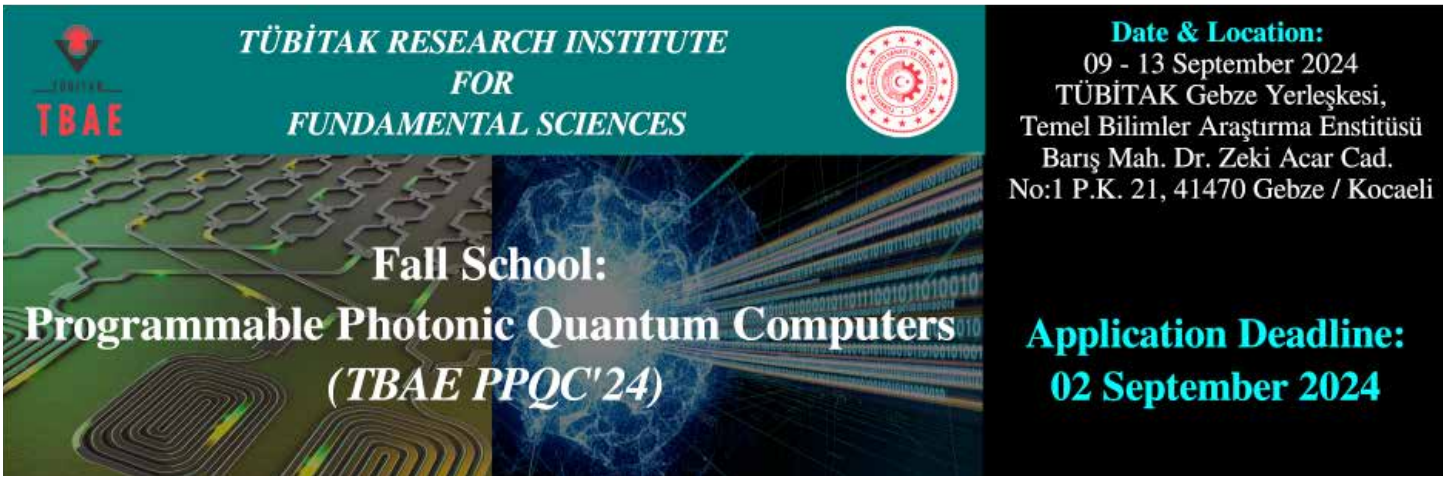
In 2024, TÜBİTAK Research Support Programs Directorate (ARDEB) allocated 4.99 billion TL to support 6,526 R&D projects across 186 universities, engaging 19,655 researchers and 20,337 scholarship recipients. Notable initiatives included a "Sports Research" program, studies on Traditional and Complementary Medicine, disaster-related research with AFAD, and calls addressing climate-resilient agriculture, artificial intelligence, and demographic health surveys. Under the 1004 Excellence Center Program, 252 projects within 20 High Technology Platforms united over 1,500 researchers, enhancing Türkiye's scientific leadership.

TÜBİTAK BİDEB: A Year of Notable Achievements in 2024

In 2024, TÜBİTAK Scientist Support Programs Directorate (BİDEB) provided 3.3 billion TL to support 91,000 scientists and young researchers. 41,982 project applications received from 66,116 students included 73 medals at science Olympiads, and Turkish students excelled globally. BİDEB awarded 22,300 scholarships and supported 5,277 researchers for international collaborations. Additionally, 2 grand awards and 5 special awards were earned by Turkish students at the Regeneron ISEF Science and Engineering Fair.

TÜBİTAK TEYDEB: Driving Innovation and Sustainability in 2024

In 2024, TÜBİTAK Technology and Innovation Support Programs Directorate (TEYDEB) provided 4.13 billion TL to 3,635 industrial R&D projects, while $195 million in startup investments were made through the BİGG program. TÜBİTAK also advanced the green transformation agenda, supporting 124 green industry projects with 1 billion TL. The 1711 Artificial Intelligence Ecosystem Call attracted 27 consortia, strengthening Türkiye's AI capabilities.



TÜBİTAK TTO: A Year of Technological Progress

In 2024, TÜBİTAK Technology Transfer Office (TTO) signed 2 new licensing agreements, bringing the total to 22, and generated 7.1 million TL in revenues. TÜBİTAK registered 335 patents, underscoring Türkiye's innovations.

TÜBİTAK International Cooperation: Expanding Global Reach

TÜBİTAK secured 39.1 million euros for 85 Horizon Europe projects and expanded bilateral collaborations with 108 organizations in 75 countries. Bilateral scientific and technological agreements also extended to institutions in two additional COMSATS member countries, strengthening Türkiye's global scientific and technological presence.

TÜBİTAK BUTAL: A Year of Excellence

TÜBİTAK Bursa Test and Analysis Laboratory Directorate (BUTAL) achieved progress in quality management, eco-friendly initiatives, and international collaborations. It hosted 7 applied laboratory training sessions and 1,696 service requests, while recycling 1.5 tons of materials.

In 2024, TÜBİTAK played a pivotal role in advancing Türkiye's scientific, technological, and innovation capabilities, solidifying its leadership in both national and international platforms. The private sector also remains as the main driving force of R&D expenditure in the country, representing about 65% of the total &D expenditure. In the most recent statistical year, the share of R&D expenditure in Gross Domestic Product was 1.42% and the number of R&D personnel in terms of full-time equivalent (FTE) was about 291 thousand. In addition to these important national milestones, about 48% of the R&D expenditure in the manufacturing industry was realized by enterprises involved in high-technology activities. With groundbreaking projects and strategic global partnerships, TÜBİTAK, together with the R&D and innovation ecosystem, continues to drive Türkiye toward a more innovative, sustainable future.

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FINANCIAL AFFAIRS

Major source of financing COMSATS' operations is annual contributions from the Government of Pakistan towards running cost of the organization's Secretariat. Other member states of COMSATS pay voluntary Annual Membership Contribution (AMC) towards COMSATS. The AMC received from member states is kept as 'Trust Money, COMSATS Secretariat instituted creation of an Endowment Fund of US$ 10.00 million during the 2nd General Meeting of COMSATS, held on 16-17 April 2012 in Islamabad, Pakistan.

Financial Sources of COMSATS Secretariat

Major source of financing operations of COMSATS is annual contribution from the Government of Pakistan towards running cost of the organization's Secretariat. Other member states of COMSATS pay voluntary Annual Membership Contribution (AMC) towards COMSATS. The AMC received from member states is kept as 'Trust Money' and spent on activities related to the respective contributing country. In order to have a regular source of financing for technical programmes, COMSATS Secretariat initiated creation of an Endowment Fund of US$ 10.00 million during the 2nd General Meeting of COMSATS, held on 16-17 April 2012 in Islamabad, Pakistan.

Host Country (Pakistan) Contribution towards running costs of COMSATS Secretariat

The Government of the Islamic Republic of Pakistan, being host country of COMSATS, has been meeting the running costs of COMSATS Secretariat under an international agreement since establishment of COMSATS in 1994. The fixed annual grant (contribution) is revised from time to time as per requirement of the organization. The amount of annual contribution was last revised/fixed to PKR 40.00 million in 2009. Due to increase in expenditure and inflation, the amount was found insufficient to meet the organization's needs. Accordingly, COMSATS Secretariat requested the Government of Pakistan for enhancement of the contribution.

The Government of Pakistan has allocated Rs. 106.20 million and 140.00 million during the financial years 2022-2023 and 2023-2024 respectively towards running cost of COMSATS Secretariat. The Government of Pakistan has, however, allocated an amount of 40.00 million for the financial year 2024-2025 which is Rs. 100.00 million less than the allocation of last financial year (2023-2024). The Executive Director COMSATS has taken up the matter of insufficient allocation for running costs of COMSATS Secretariat with the Honorable Prime Minister of Pakistan. The Prime Minister's office, after taking views of the Ministry of Science and Technology and the Finance Division, has very kindly instructed both departments to provide sufficient funds to COMSATS to meet running costs of its Secretariat. In light of directives of the PM office, the Finance Division has advised the Ministry to provide additional grant to COMSATS for the current financial year through re-appropriation and to allocate sufficient funds for the forthcomings years towards running cost of COMSATS Secretariat. It is hoped that the Ministry of Science and Technology would provide additional funds through appropriation from savings of the current financial year and will allocate sufficient funds in the budget for the forthcoming years as per advice of the Finance Division.

Annual Membership Contribution (AMC)

COMSATS' Member States are paying Annual Membership Contribution (AMC) towards COMSATS on voluntary basis. The AMC received from COMSATS Member States is kept as "Trust Money" and is utilized to support technical activities and programmes of the contributing member state. During the reporting period (January to December 2024), COMSATS received Annual Membership Contribution (AMC) from three member countries – China (US$ 44,752/-), Jamaica (US$ 19,965) and Pakistan (US$ 21,606/-).

COMSATS Endowment Fund

In order to strengthen the financial health of COMSATS and to create a regular source of income for technical activities of COMSATS, an endowment fund of US$ 10.00 million was approved upon proposal of the then Prime Minister of Islamic Republic of Pakistan, in his capacity as the Chairperson of COMSATS, during the 2nd General Meeting of COMSATS held on 16-17 April 2012 in Islamabad, Pakistan. During this meeting, the Government of Pakistan pledged seed money of US$ 1.00 million as its contribution towards the proposed fund and representatives of other member states also made pledges to contribute towards COMSATS Endowment Fund. However, so far, only the Government of Pakistan has contributed PKR. 10.00 million towards the Fund. After contribution from COMSATS Secretariat, COMSATS Internet Services, some individuals and profit earned, the total worth of the fund is Rs. 25.200 million as on 31st December 2024.

Accounts and Audit

The accounts of COMSATS Secretariat are managed and maintained as per international practices and in compliance with the International Accounting & Financial Standards. The financial year of COMSATS Secretariat begins from 1st July and ends on 30th June of the succeeding year. The accounts of COMSATS Secretariat are audited by a reputed chartered accountancy firm every year. The audited accounts, along with the auditors' report, are approved by the COMSATS' Management Committee/ Coordinating Council in the annual meetings.

The accounts of COMSATS Secretariat for the financial year ended on June 30, 2023, have been audited by M/s RSM Avais Hyder Liaquat Nauman, Chartered Accountants, and draft auditors' report and financial statements were presented to the Coordinating Council of COMSATS in its 25th Meeting held on September 10-12, 2024 in Tianjin, China.

LIST OF FOCAL POINTS IN COMSATS' MEMBER STATES*



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Ministry of Science and Technology
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H.E. Mr. Yin Hejun
Minister
Ministry of Science and Technology
People's Republic of China



H.E. Dr. Yesenia Olaya Requene
Minister
Ministry of Science, Technology and Innovation
Republic of Colombia



Prof. Dr. Gina El-Feky
Acting President
Academy of Scientific Research and Technology
Arab Republic of Egypt



H.E. Prof. Pierre Gomez
Minister
Ministry of Higher Education, Research, Science and Technology
Republic of The Gambia



Dr. Ibrahim Murtala Muhammed
Minister
Ministry of Environment, Science and Technology
Republic of Ghana



H.E. Hossein Simaee Sarraf
Minister
Ministry of Science, Research and Technology
Islamic Republic of Iran



Hon. Daryl Vaz
Minister
Ministry of Science, Energy and Technology
Jamaica, West Indies



Prof. Mashhoor Al-Refai
Secretary General
Higher Council for Science and Technology (HCST)
Hashemite Kingdom of Jordan



H.E. Mr. Sayasat Nurbek
Minister
Ministry of Science and Higher Education
Republic of Kazakhstan



Hon. Dr. Kim Sung Jin
President
State Academy of Sciences
Democratic People's Republic of Korea



H.E. Prof. Azzedine El Midaoui
Minister
Ministry of Higher Education, Scientific Research and Innovation
Kingdom of Morocco



Hon. Chief Uche Godfrey Nnaji
Minister
Federal Ministry of Science, Technology and Innovation
Federal Republic of Nigeria



Mr. Sajid Baloch
Secretary
Ministry of Science and Technology
Islamic Republic of Pakistan

* As of July 2025



H.E. Dr. Mahmoud Abu Mowais
Minister
Ministry of Higher Education and Scientific Research
The State of Palestine



Hon. Dr. Renato U. Solidum, Jr
Secretary
Department of Science and Technology
Republic of the Philippines



Hon. Dr. El Hadji Abdourahmane Diouf
Minister
Ministry of Higher Education, Research and Innovation
Republic of Senegal



H.E. Farah Sheikh Abdulqadir
Minister
Ministry of Education, Culture and Higher Education
Federal Republic of Somalia



Hon. Sunil Handunneththi
Minister
Ministry of Industry
Democratic Socialist Republic of Sri Lanka



H.E. Prof. Ahmed Mudawi Musa Mohamed
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Ministry of Higher Education and Scientific Research
Republic of the Sudan



H.E. Dr. Marwan Jamil al-Halabi
Minister
Ministry of Higher Education and Scientific Research
Syrian Arab Republic



Hon. Prof. Adolf Mkenda
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Ministry of Education, Science and Technology
The United Republic of Tanzania



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Ministry of Higher Education and Scientific Research
Republic of Tunisia



Prof. Dr. Orhan AYDIN
President
The Scientific and Technological Research Council of Türkiye (TÜBİTAK)
Republic of Türkiye



Dr. Martin Ongol
Executive Secretary
Uganda National Council for Science and Technology (UNCST)
Republic of Uganda



Hon. Prof. Dr. Khalid Ahmed Alwosabi
Minister
Ministry of Higher Education and Scientific Research
Republic of Yemen



Hon. Dr. Frederick Shava
Minister
Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development
Republic of Zimbabwe

COMSATS' Centres of Excellence

BCSIR-Bangladesh

Embrapa Agrobiologia-Brazil

ICCES-China

TIB-China

CIF-Colombia

NRC-Egypt

UTG-Gambia

CSIR-Ghana

ITS-Indonesia

IROST-Iran

ICENS-Jamaica

RSS-Jordan

KazNU-Kazakhstan

NMC-Nigeria

CUI-Pakistan

ICCBS-Pakistan

AQU-Palestine

UCAD-Senegal

UGR-Spain

ITI-Sri Lanka

IRCC-Sudan

HIAST-Syria

TIRDO-Tanzania

CERTE-Tunisia

TÜBITAK-Türkiye

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