



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

Annual Report 2020



Bangladesh



China



Colombia



Egypt



Gambia



Ghana



Iran



Jamaica



Jordan



Kazakhstan



Korea DPR



Morocco



Nigeria



Pakistan



Palestine



Philippines



Senegal



Somalia



Sri Lanka



Sudan



Syria



Tanzania



Tunisia



Turkey



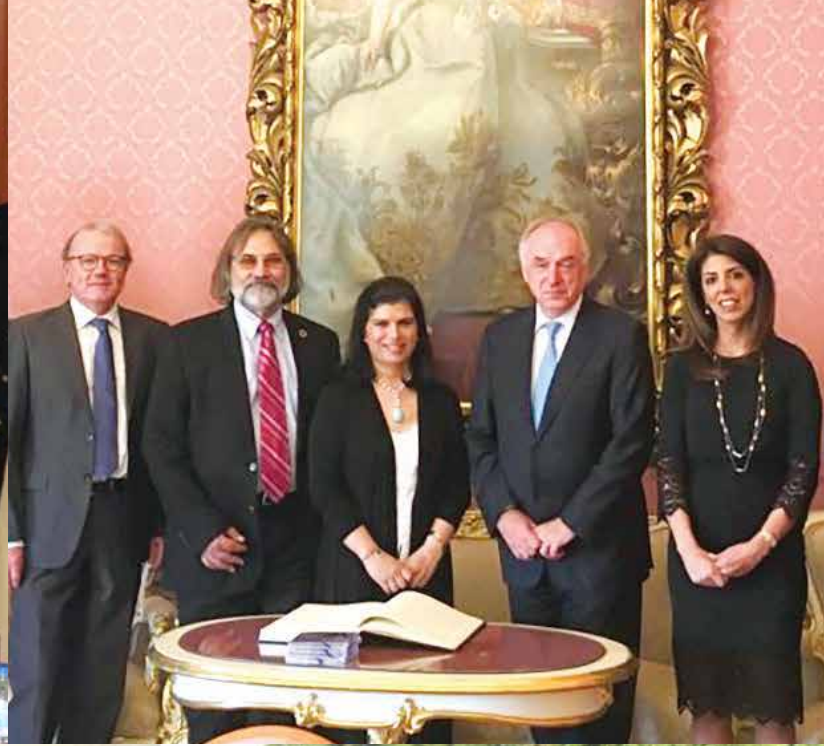
Uganda



Yemen



Zimbabwe



ANNUAL REPORT 2020

March 2021



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



Hon. Nana Addo Dankwa Akufo-Addo
President of Republic of Ghana
Chairperson COMSATS

Hon. Nana Addo Dankwa Akufo-Addo is the incumbent President of the Republic of Ghana. He won the country's Presidential Elections for two consecutive terms in 2016 and 2020. President Akufo-Addo assumed charge as Chairperson of COMSATS upon becoming the President of Ghana (the country holding COMSATS' Chair) for the first time on 7th January 2017. He later retained the charge upon re-election.

The Chair of COMSATS had been rotated in 2012 from Pakistan to Ghana through consensus among the members of COMSATS' Commission at its 2nd General Meeting held in Islamabad and stayed with Ghana after consensus in 3rd General Meeting. As a lawyer, Mr. Akufo-Addo worked to champion the cause of human rights, rule of law, justice, freedom, and democracy in Ghana. He is also the Co-chair of the UN Secretary-General's SDG Advocates working with his fellow advocates to promote the SDGs as part of an ambitious and transformative global development agenda.



H.E. Mr. Imran Khan
Prime Minister of Pakistan
Head of Government and Member
of the Commission from
the Host Country, Pakistan

H.E. Mr. Imran Khan became the 22nd Prime Minister of Pakistan on 18th August 2018. Before his political career, Mr. Khan was a well-known figure as a cricketer and a philanthropist. Educated from top institutions of Pakistan and England, Mr. Khan is the Chancellor of the University of Bradford and has also received an honorary fellowship by the Royal College of Physicians.

Mr. Khan aspires to make Pakistan a technologically advanced country whereby it reaps the dividends of most modern R&D outcomes for national prosperity and well-being. His resolve to lift the nation from backwardness and poverty manifests in his government's initiatives in health, education, judicial system reforms, science & technology and smart governance.



Editors

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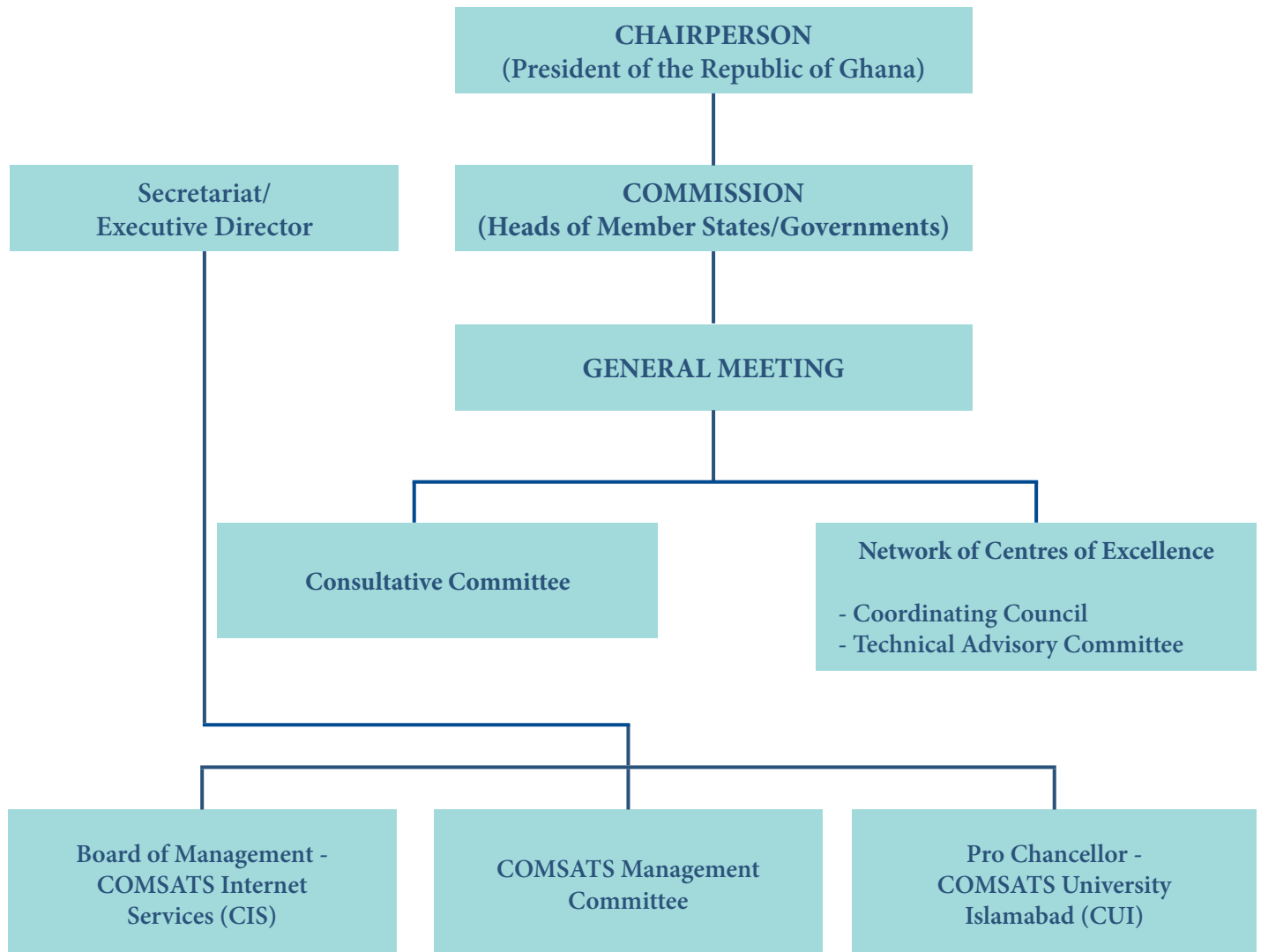
Designing & Development

Mr. Imran Chaudhry

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ORGANIZATIONAL STRUCTURE





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. 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 potentials. Their common aspirations for development through cooperation in S&T was the main driver of them coming 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 24 reputed R&D and S&T, as well as universities.

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





Dr. S.M. Junaid Zaidi
Executive Director COMSATS

Dr. S. M. Junaid Zaidi assumed the charge as Executive Director in February 2017, by virtue of which he is also the ex-officio Secretary to the Commission, Coordinating Council and the Consultative Committee. He has rich and diverse experience spanning over forty years, ranging from his work for international and national organizations, educational institution-building, and research and teaching to foreign collaborative ventures. He has been the founding Rector of a Centre of Excellence of COMSATS, the COMSATS University Islamabad (CUI), which has phenomenally grown both nationally and internationally. He is recipient of two prestigious national awards of Pakistan, *Sitara-i-Imtiaz* and *Hilal-i-Imtiaz*.

FOREWORD

The 21st Century has posed serious strategic stability challenges most of which relate to the non-traditional threats, including climate change and environment, infectious diseases and food insecurity. The global community demonstrated its resolve to deal with these vulnerabilities through the commitment made under the 2030 Global Sustainable Development Agenda. The urgency for collective action has been further created because of the global COVID-19 pandemic that has gripped people and countries all over the world.

The quick responses and race for early medical breakthroughs, by and large, exhibited international solidarity. While in record time the drugs and vaccines have revolutionized the public health mechanisms, the world is bracing for recovery amidst optimism for building back better. The pandemic has altered many of the illusions reinforcing how interconnected the world is and how a ripple in one corner of the world affects the entire globe. On the positive side, latent opportunities in such areas as digital technology, health sciences and R&D especially in STEM related fields have brought to the fore the real potential of mankind.

It is exhilarating for COMSATS that there will be continuity in the leadership of the Commission as happily President Hon. Nana Addo Dankwa Akufo-Addo has been re-elected in December 2020 elections in Ghana. I would like to thank His Excellency for hosting a meeting for COMSATS on the sidelines of African Union Summit in Addis Ababa in February 2020. The valuable inputs from H. E. Muhammadu Buhari, President of Nigeria; H.E. Isatou Touray, Vice President of Gambia; and senior government officials from Uganda; Republic of Ivory Coast; Zimbabwe; Ghana; Nigeria; and Ethiopia enriched the discussions.

Despite the challenges posed by the pandemic that had incapacitated the world in a number of ways, including COMSATS' member states, COMSATS with the help of its focal points, centres of excellence and partner institutions continued its struggle on various fronts, which includes networking consultancy and advocacy of COMSATS' mandate through its statutory body meetings. I feel encouraged to mention here the holding of COMSATS Consultative Committee Meeting under the chairpersonship of H.E. Mr. Fawad Hussain Chaudhry, the Federal Minister for Science and Technology of Government of Pakistan. The Meeting was successful in breaking new grounds of cooperation for addressing contemporary socio-economic

challenges especially relating to COVID-19 and climate change. Among other things, it was learnt and appreciated that great efforts were made by COMSATS' Member States towards COVID-19 response. After its virtual meeting held in July 2020, the Coordinating Council remained engaged with the networking and mutual cooperation activities as well as providing important feedback and information to COMSATS Secretariat through online interactions facilitated by the Secretariat.

The highlight of COMSATS' Membership drive was a meeting with Chairman of the Presidency of Bosnia and Herzegovina, H.E. Mr. Sefik Dzaferovic, towards the end of the year. The opportunity was availed during the Chairman's state visit to Pakistan and briefing was given on the benefits of joining the organization as well as the structure, programmes, vision and mission of COMSATS. A formal letter of invitation for his country to join COMSATS was also handed over to him.

It is heartening to report that COMSATS' partnership with China – an honored Member was further cemented during the year including collaboration with the Chinese State Ministry of Science and Technology and the Centre for Environmental Economics of the University of Chinese Academy of Sciences (CEE-UCAS). The scope of COMSATS' activities has expanded during the year notwithstanding the constraints imposed by COVID-19. It includes interactions with UNESCAP, UNOSSC, UNESCO, the Geneva-based South Centre, US-based institutions and the Alliance of International Science Organizations (ANSO).

The three areas in which considerable interest was evinced internationally are climate change, telehealth and digitalization as well COMSATS' successes as a sub-regional organization. Given the challenges related to the pandemic, telehealth platform was used to exchange views with COMSATS' member countries in particular sharing of experiences and knowledge related to digital health.

Detailed information on the aforementioned activities and some other achievements are reflected in the report. The success of COMSATS is linked with the support that it enjoys from the Member States, partner institutions and the scientific centres whose contributions are of immense significance.

I would also like to thank COMSATS' team who worked tirelessly and responded to the challenges posed by COVID-19 with adaptability, innovation and alacrity.

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

The Academy of Scientific Research and Technology



The Gambia

Ministry of Higher Education, Research, Science and Technology



Ghana

Ministry of Environment, Science, Technology and Innovation



Iran

Ministry of Science, Research and Technology



Jamaica

Ministry of Science, Energy and Technology



Jordan

Higher Council for Science and Technology



Kazakhstan

Ministry of Education and Science



Korea DPR

State Academy of Sciences



Morocco

Ministry of National Education, Vocational Training, Higher Education and Scientific Research



Nigeria

Federal Ministry of Science & Technology



Pakistan

Ministry of Science and Technology



Palestine

Ministry of Higher Education and Scientific Research



Philippines

Department of Science and Technology



Senegal

Ministère de l'Enseignement Supérieur



Somalia

Ministry of Education, Culture and Higher Education



Sri Lanka

Ministry of Higher Education & Technology and Innovation



Sudan

Ministry of Higher Education and Scientific Research



Syria

Ministry of Higher Education



Tanzania

Ministry of Education, Science & Technology



Tunisia

Ministry of Higher Education and Scientific Research



Turkey

The Scientific and Technological Research Council of Turkey (TUBITAK)



Uganda

Uganda National Council for Science & Technology



Yemen

Ministry of Higher Education and Scientific Research



Zimbabwe

Ministry of Higher and Tertiary Education, Science and Technology Development



H.E. Mr. Chaudhry Fawad Hussain
Chairperson of COMSATS Consultative Committee

H.E. Mr. Chaudhry Fawad Hussain is the Federal Minister for Science and Technology of COMSATS host country, Pakistan. Mr. Hussain assumed the Charge as Pakistan's Federal Minister for Science and Technology on 19th April 2019, by virtue of which he is the Chairperson of COMSATS' Consultative Committee. Under his leadership, the Ministry of Science and Technology has constituted three task forces on technology relating to Agriculture, Education and Renewable Energy Technologies (RETs) to help promote scientific innovation, R&D for development, science and skill based education in the country.

FROM THE CHAIRPERSON COMSATS CONSULTATIVE COMMITTEE

Since inception, COMSATS has remained at the forefront to promote science and technology for sustainable development in the Global South. The role of COMSATS' focal ministries and Centres of Excellence in the promotion of COMSATS' mission is commendable. They have always played a vital part in expanding the frontiers of ST&I in developing the South within the framework of United Nations 2030 Global Development Agenda.

I highly appreciate COMSATS' flagship initiatives, COMSATS University Islamabad (CUI), COMSATS Internet Services (CIS) and COMSATS Telehealth programme that have greatly contributed to the host country in their relevant niches. These have the potential to be replicated as models in the developing world. CUI has attained the status of a full-fledged university and is actively contributing in the fields of education, research, innovation and capacity building. CIS, Pakistan's pioneer Internet Service Provider (ISP), is operating in 19 cities of the country, whereas, the Telehealth project is effectively extending healthcare to rural populations in remote areas of Pakistan. These programmes have received huge appreciation, which reflects COMSATS' recognition as a highly useful body contributing to socio-economic well-being of the masses in the developing countries.

Undoubtedly, the level of success and the standards of COMSATS' achievements are due to the continuous patronage of the Organization by the Member States. Pakistan, specifically, has done its best to live up to the honour of hosting the Secretariat of COMSATS since 1994.

I, therefore, highly appreciate and congratulate all COMSATS Member States for helping the Commission pursue its objectives and uphold the principles and high standards of work. I urge their continued support to COMSATS' programmes aimed at bringing peace and prosperity to the developing world.

Pakistan is a keen supporter of scientific and technical cooperation in the fields of education, health, communication, research and development for the benefit of the people in developing countries. Therefore, we greatly appreciate the Commission's focus on education, health and capacity building at the national, regional and global level as well as its efforts for strengthening South-South and Triangular Cooperation.

I would like to extend my compliments to my counterparts in COMSATS' member states and network members for their contribution to COMSATS' mission.

Members of COMSATS Coordinating Council



Prof. Dr. Md. Aftab Ali Shaikh
Chairman BCSIR, Bangladesh



Dr. Maria Elizabeth Correia
DG Embrapa Agrobiologia, Brazil



Prof. Lin Zhaohui
Director ICCES, China



Prof. Dr. Yanhe Ma
Director General TIB, China



Dr. Eduardo Posada F.
Director CIF, Colombia



Prof. Mohamed Hashem
President NRC, Egypt



Prof. Dr. Faqir M. Anjum Ch.
Vice Chancellor UTG, Gambia



Prof. Dr. Victor Agyeman
Director-General CSIR, Ghana



Prof. Dr. Mochamad Ashari
Rector ITS, Indonesia



Dr. Alireza Ashori
President IROST, Iran



Mr. Charles N. Grant
Director General ICENS, Jamaica



HRH Princess Sumaya bint El Hassan
President RSS, Jordan



Prof. Dr. Zhanseit Tuimebayev
Rector KazNU, Kazakhstan



Prof. Stephen E. Onah
Director NMC, Nigeria



Prof. Dr. M. Tabassam Afzal
Rector CUI, Pakistan



Prof. Dr. M. Iqbal Choudhary
Director ICCBS, Pakistan



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



Prof. Ahmadou Aly MBAYE
Rector/President UCAD, Senegal



Dr. Radhika Samarasekera
Director General ITI, Sri Lanka



Dr. Gussai H. Sheikheldin
Director General IRCC, Sudan



Dr. Maher Suleiman
Director HIAST, Syria



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



Prof. Ahmed Ghrabi
Director General CERTE, Tunisia



H.E. Prof. Hasan Mandal
President TUBITAK, Turkey



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). Later, the Council approved his life-time membership during its 22nd Meeting. Also, he was made the Chairperson for another term by 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.

FROM THE CHAIRPERSON COORDINATING COUNCIL

Since the last physical meeting of COMSATS Coordinating Council (CCC) in Tianjin (China) in April 2019, followed by the emergence of the global COVID-19 pandemic at the end of 2019 which has strong impact on the work of all of us, COMSATS secretariat together with members of the CCC have exerted great effort towards finding out together how to organize our work and how to communicate.

The report outlines the activities of COMSATS' main accomplishments through its secretariat represented by the esteemed Centres of Excellence during the last year. It also represents a platform for moving ahead to achieve the goal that COMSATS aims at, and furthermore to build peaceful and prosperous societies. Overall, many activities have been accomplished during the last year, including physical and virtual meetings, virtual presentations, webinars, information dissemination, induction of new

members in the Coordinating Council, and enhancing collaboration with other international organizations.

I believe that we will continue working together within the next years on strengthening scientific capacity through networking and new demanded thematic research groups. I encourage all COMSATS Centres of Excellence to share and exchange their experience to develop new vaccines or drugs for protection or cure of our citizens from COVID-19 and its complications.

I would personally like to thank all those who have worked under the current exceptional conditions and inconvenient circumstances throughout these hard times. The achieved tasks were far more successful than estimated by virtue of our sincere desire for South-South cooperation.

CORE ACTIVITIES OF COMSATS SECRETARIAT

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CORE ACTIVITIES OF COMSATS SECRETARIAT

COMSATS Secretariat provides secretarial assistance to both the Commission and the Network of Centres of Excellence. It is 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 inter-governmental agencies, national S&T institutions, R&D organizations, members of academia and scientific community across the world. Other core activities of the Secretariat relate 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.



COMSATS' High-Profile Meeting on the sidelines of African Union Summit (February 9, 2020)

The Honourable Nana Addo Dankwa Akufo-Addo, President of Ghana and Chairperson of COMSATS, hosted a High-Level COMSATS Meeting in Addis Ababa, Ethiopia, on 9th February 2020, on the sidelines of 33rd African Union (AU) Summit Meeting. This was a Ghana event – one of the side events involving the AU Member States, including Mali, Equatorial Guinea, Seychelles, Ethiopia, Nigeria, and Uganda.

The AU which comprises 55 countries from the continent of Africa held its annual summit in Addis Ababa on 9th and 10th February 2020. The theme focused on tackling the problem of violence so that peace could usher in a period of sustainable development. “Silencing the Guns for Peace and Development”

encapsulates the aspirations of the people of Africa for a peaceful environment. Silencing the Guns is a commitment towards the realization of Africa's Agenda 2063, in particular creating peace within the continent to achieve development. Peace and stability are intertwined with policies and strategies aimed at socio-economic betterment of the people – a desire which is shared by COMSATS with the AU. Twelve of the Organization's member states and 07 scientific centres in the Network of Centres of Excellence are from Africa.

Since its inception, COMSATS and Africa have special relationship. At the Foundation meeting held in 1994 the support extended by the leaders from Africa generated momentum for collective response to the challenges of under-development in the South.

The main agenda of the High-Level

Breakfast Meeting was the fourth General Meeting of the Commission and Accra Forum on Science and Technology for Sustainable Development, which was then scheduled to be held in the second quarter of 2020. Additionally, through this meeting, COMSATS aimed at sensitizing participating high-level officials about its international programmes designed to meet the scientific and technological needs of its member states with the purpose to achieve economic and social development at large.

Presided over by the Honourable President of Ghana, the meeting was attended by two Presidents, a Vice President, and seven Ministers. The following Excellencies and officials graced the occasion with their presence:

- H. E. Muhammadu Buhari, President of Nigeria;
- H.E. Isatou Touray, Vice President of



- Gambia;
- H.E. Dr. Elioda Tumwesigye, Minister of Science, Technology and Innovation, Uganda;
- H. E. Mr. Patrick Achi, Minister/Secretary General to the President, Republic of Ivory Coast;
- Mr. J.H. Mupamhanga, Deputy Chief Secretary, Office of the President of Zimbabwe;
- Hon. Shirley Ayorkor Botchwey (MP), Minister for Foreign Affairs and Regional Integration, Ghana;
- H. E. Geoffrey Onyeama, Minister of Foreign Affairs, Nigeria;
- H.E. Mr. Alan Kyerematen Minister of Trade and Industry, Ghana;
- H.E. Mr. Ambrose Dery, Minister of Interior, Ghana;
- Dr. Eugene Owusu, Special Advisor to the President of Ghana on the SDGs;
- H.E. Asghar Golo, Ambassador of Pakistan to Ethiopia; and
- H.E. Mrs. Amma A. Twum-Amoah, Ambassador of Ghana to Ethiopia.

The Secretary to COMSATS' Commission, Executive Director COMSATS, Dr. S. M. Junaid Zaidi, was also present during the meeting. Other officials representing COMSATS included Chairperson of its Coordinating Council, Prof. Ashraf Shaalan; Advisor to the President of COMSATS' focal point in Turkey, Scientific and Technological Research Council of Turkey (TÜBİTAK), Prof. Dr. Orkun Hasekioglu; Advisor (Climate Change) at COMSATS, Amb. (R) Shahid Kamal; and Deputy Director (Systems)

COMSATS, Mr. Nisar Ahmad.

Hon. Nana Addo while opening the Meeting underscored the role that COMSATS is playing in advocacy of science and technology as an important tool for peace and progress in the developing countries. His Excellency appreciated the support extended by the Government of Pakistan to COMSATS for its contribution in assisting developing countries in the field of science and technology. His Excellency informed that the purpose of the meeting was to ensure that Member States recommit themselves to COMSATS' mission, and to reposition the Commission to support the collective drive for development, leveraging science, technology and innovation. He was confident that COMSATS is well equipped to help foster greater partnerships to advance science and technology for the development of Africa. He considered the work of the organization important for the application of science and technology for the development of Africa and invited more African countries to join COMSATS.

On the occasion, Dr. Zaidi highlighted the significance of promoting greater collaboration with countries in Africa and underscored the need to increase COMSATS' membership in Africa. He informed that COMSATS has initiated several programmes in capacity-building, grant of scholarships, and assisting in establishing S&T-related interventions in member countries. He also highlighted the new initiatives taken by COMSATS

in the areas of climate change, sustainable development and fostering partnerships with the United Nations, Commonwealth, European Commission, and international and regional organizations in addressing developmental challenges.

COMSATS is well-positioned to support 'Agenda 2063: The Africa We Want' to deliver on sustainable development.

*Hon. Nana Addo Dankwa
Akufo-Addo
President of Republic of Ghana*

Heading COMSATS' body that represents COMSATS' International Centres of Excellence, Prof. Ashraf Shaalan briefed the participants about the activities of COMSATS Coordinating Council, especially in capacity-building in ICTs, renewable energy, agriculture, food security, biotechnology, material sciences, natural products sciences and climate change, especially through institutional arrangements. Ambassador Shahid Kamal briefed the meeting on the new initiative of establishing COMSATS' Centre for Climate and Sustainability (CCCS), which has participation from 15 COMSATS' member states.

During the interactive discussion session,

the Honourable President of Nigeria appreciated the work done by COMSATS and affirmed that Nigeria recognizes the centrality of science and technology in the development process and will ensure adequate resource allocation for research and development. He added that technology is aiding Nigeria's advancement in critical sectors of the economy. He noted that his administration was conscious of the relevance of science and technology in national development and as such has a ministry dedicated to the sector, which is headed by a scientist.

Foreign Minister of Nigeria and Minister for Science & Technology of Uganda, expressed interest in seeking assistance of COMSATS with regard to improving the state of science and technology education in African schools, increasing capacity development efforts and forging closer cooperation with COMSATS' Centres of Excellence.

Contributing to the open discussion at the meeting, Governor Mr. Benedict Bengioushuye Ayade of Cross River State, who was part of the Nigeria's delegation to Ethiopia, suggested that COMSATS should align its Network operations related to education, training and research for specific fields and vocations of S&T to better contribute to national and regional development.

Concluding the meeting, the Honourable Chairperson of COMSATS called for intensifying cooperative activities of COMSATS in priority areas to strengthen capacities in meeting UN Sustainable Development Goals. He invited highest level representation by COMSATS' member states as well as other countries from the developing world to attend COMSATS' General Meeting.

The meeting ended with a cordial note and with the handing over of COMSATS' information material including membership document to the Director General.

Major outcomes of the Addis Ababa Meetings

- **Strengthened Membership Campaign;** Offers of State membership extended in person to high-level officials of Ethiopia, Ivory Coast, Equatorial Guinea, and Eswatini;
- **Improved Presence in Africa;** with President of Ghana's strong international portfolio and 12 African countries as COMSATS' members, the meeting has resulted in building new inroads for the international cooperation front;
- **Stronger Networking and Projection;** the meeting was widely

covered in African media, harnessing due recognition for COMSATS' mandate, and activities in Africa and the organization's potential for more development activities and regional and international cooperation in Africa.

4th Meeting of COMSATS Consultative Committee (November 11, 2020)

The Fourth Meeting of COMSATS Consultative Committee chaired by H.E. Mr. Chaudhry Fawad Hussain, Chairperson COMSATS Consultative Committee and Federal Minister for Science and Technology, Government of Pakistan, was held online on November 11, 2020.

The Meeting was attended by 30 country delegates from 19 countries: Bangladesh, China, Colombia, Egypt, Ghana, Iran, Jordan, Kazakhstan, Nigeria, Pakistan, Palestine, Somalia, Sri Lanka, Sudan, Tunisia, Turkey, Uganda, Yemen, and Zimbabwe. The meeting also had the participation from international organizations, including the South Centre, Switzerland; International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy; United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Thailand; The World Academy of Sciences (TWAS), Italy; and the United Nations Educational, Scientific and Cultural Organization (UNESCO), Pakistan.

COMSATS Centres of Excellence in China, Colombia, Egypt, Gambia, Iran, Indonesia, Jordan, Jamaica, Kazakhstan, Nigeria, Pakistan, Syria, Sri Lanka, Tunisia, and Turkey, as well as diplomatic missions of Jordan, Sri Lanka, Tunisia, and Yemen in Islamabad also joined the meeting virtually.

Inaugural Session

The Meeting was inaugurated by the





Secretary to the Committee and Executive Director COMSATS, Dr. S.M. Junaid Zaidi, on behalf of the Chairperson COMSATS Consultative Committee.

In his remarks on the occasion, Dr. Zaidi considered scientific collaboration an important area for South-South and Triangular cooperation and encouraged COMSATS' member states to use COMSATS' platform for incubating partnerships and finding new and innovative approaches to support and expedite implementation of Sustainable Development Goals (SDGs).

In his message read out at the beginning of the event by Dr. Muhammad Tariq Masood, Joint Scientific Adviser at the Ministry of Science and Technology of Pakistan, the Chairperson Consultative

Committee, H.E. Chaudhry Fawad Hussain, highlighted Pakistan, the host country of COMSATS Secretariat, as an ardent supporter of COMSATS' mandate since inception. Mr. Fawad lauded COMSATS' efforts for implementing the decision of the previous meeting and urged his counterparts in the 26 other Member States to duly support COMSATS' operations by all means, especially more regular Annual Membership Contributions.

The Honourable Minister who later joined the meeting through video conference informed the Committee about the ST&I related interventions of the Government of Pakistan that include constitution of the Task Force on Technology Driven Knowledge Economy and formulation of country's first Digital Pakistan policy. He

mentioned that Pakistan has established cooperative relationships with COMSATS' member states and the establishment of various centres of excellence of research, innovation and entrepreneurship in artificial intelligence, applied technologies, advanced technologies and biomedical materials, mineral resources, engineering, agriculture, food technologies and railway engineering are in pipeline under the knowledge economy initiative. Mr. Fawad urged COMSATS' member states to work collaboratively and pool their indigenous resources for development of vaccine against coronavirus.

Technical Proceedings

During the proceedings, the Meeting deliberated upon a nine-point agenda that, inter alia, pertained to COMSATS' programmes and activities during 2016-2020; financial matters; and new initiatives for enhancing COMSATS' science-led South-South and Triangular Cooperation.

The Meeting approved the 9-point Provisional Agenda and the Minutes of the previous Meeting of COMSATS Consultative Committee (26th October 2015, Accra, Ghana). As per regular practice, the Executive Director COMSATS delivered a brief presentation on COMSATS' programmes, activities and achievements during the period since the last Consultative Committee meeting. The





presentation highlighted the outcomes of COMSATS' campaigns for enhancing the membership of the Commission and the Network of Centres of Excellence; capacity-building programmes held in collaboration with partner organizations; measures taken to strengthen collaborative ties with international partner organizations for facilitating South-South and Triangular cooperation; activities of COMSATS' flagship projects; visits and activities of COMSATS' officials; and publications brought out during the reporting period, among others.

The presentation by the Executive Director was followed by remarks by each country delegate highlighting the various S&T related initiatives of their respective governments for addressing contemporary challenges, including the coronavirus pandemic. The delegates also shared their future aspirations in the light of their countries' priority areas. The highlights of the remarks are as follows:

Prof. Jibin Sun, Deputy Director-General of Tianjin Institute of Industrial Biotechnology (TIB), China, looked forward to collaborating with COMSATS in the areas of research, technology and innovation under a recently signed Memorandum of Understanding between the two.

Recalling the visit of COMSATS' delegation to Colombia in 2019, Dr. Eduardo Posada F., Director of Centro Internacional de Fisica (CIF), Colombia, showed keen interest in advancing South-South Cooperation from the platform of COMSATS and hoped to build stronger ties with other COMSATS' member states.

Prof. Gena Elfeky, Supervisor of the Scientific & Cultural Relations Sector, Academy of Scientific Research and Technology (ASRT), Egypt, informed about the strategic studies conducted by ASRT on the post-pandemic preparedness plan in multiple sectors, including health, education, and economy and expressed Academy's willingness to share it with other COMSATS' member states. She also proposed affiliating more Egyptian scientific and research institutions with COMSATS as Centres of Excellence and looked forward to COMSATS' support for establishing a university of Information Technology in Egypt. The other representative of Egypt expressed willingness to share the indigenously developed products (vaccines and diagnostic kits) with other COMSATS' member states.

Mr. Mbakeh Camara, Director of University Relations, The University of The Gambia, The Gambia highlighted agriculture, food security and

biotechnology as few priority areas of his government as part of its development plan. He invited other COMSATS' member states for partnerships in achieving Gambia's development goals.

Considering food, energy and water related challenges a regional issue, **Hon. Dr. Dia-Eddin Arafah, Secretary General, Higher Council for Science and Technology (HCST), Jordan**, proposed initiating a joint R&D programme for combating the carbon emissions. He emphasized building partnerships to help advance the initiatives taken by COMSATS.

Prof. Dr. Tlek Kabul Ramazanov, Vice-Rector for Research & Innovations, Al Farabi Kazakh National University (KazNU), Kazakhstan, apprised of the national efforts against COVID-19 pandemic, including the development of two vaccines against coronavirus. He also mentioned that three students from COMSATS' member states (Iran, Pakistan, and Syria) are availing PhD scholarship through COMSATS' platform at COMSATS Centre of Excellence in Kazakhstan, the Al-Farabi Kazakh National University (KazNU).

Pharm. Abayomi Oguntunde, Director (Bioresources Technology Research & Development), Department of Bioresources Development, Federal Ministry of Science & Technology (FMST), Nigeria, showed interest in COMSATS' Telehealth programme as well as the establishment of a COMSATS university in Nigeria. **Prof. Stephen E. Onah, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria**, looked forward to collaborating with COMSATS' Network for prevention, testing and treatment of COVID-19 and also to promote research and innovation through scientific exchanges.

Considering COVID-19 as the greatest challenge of the present time, Dr. Ahmed Othman, Director General (R&D), Ministry of Higher Education &



Scientific Research, Palestine, expressed keen interest in collaborating with other COMSATS' member states for finding solution to this challenge and hoped to benefit from the various programmes and activities of COMSATS.

H.E. Dr. Intisar Sigheiroun Alezein (Ms.), Minister of Higher Education and Scientific Research, Government of Sudan, informed that COVID-19, floods and famine are on her Government's priority as development challenges and emphasized on building research collaboration for dealing with COVID-19 crisis. Further, she proposed establishing a crisis fund to help deal with unprecedented challenges such as the current pandemic.

Ms. Deepa Liyanage, Additional Secretary, State Ministry of Skill Development, Vocational Education, Research and Innovation, Sri Lanka, appreciated the role of COMSATS in promoting scientific and technological education in its Member States. She informed that Sri Lanka is promoting scientific knowledge to aid the transformation of country's various economic sectors. Also, the Government of Sri Lanka has introduced vocational training and skill development

programmes to help reduce the unskilled labour force in the country. She reiterated her government's interest in establishing a COMSATS university in Sri Lanka and hoped to establish ties with COMSATS' member states for joint research work.

Prof. Samia Charfi Kaddour, Director General of Scientific Research, Ministry of Higher Education and Scientific Research, Tunisia, informed that science and technology is the priority of the Tunisian government for the achievement of Sustainable Development Goals (SDGs). She emphasized the need for building multilateral scientific collaborations to find sustainable solutions for the society.

Dr. Orkun Hasekioğlu, Advisor to the President of the Scientific and Technological Research Council of Turkey (TÜBİTAK), Turkey, appreciated COMSATS' support in the form of research grants, scientific exchanges and capacity building activities. He informed that Turkey, is working on the development of vaccine and therapeutic interventions for COVID-19 and expressed willingness to share these resources with other COMSATS' member states. He also looked forward to collaborating with COMSATS for the establishment of a

research center on artificial intelligence.

Dr. Martin Patrick Ongol, Deputy Executive Secretary, Uganda National Council for Science and Technology (UNCST), Uganda, proposed holding a webinar on food security challenges in COMSATS' member states. He looked forward to collaborating with COMSATS' Network for research management and development of diagnostic kits for COVID-19. He informed that Uganda has three Centres of Excellence which have been established with the support of the World Bank. He expressed interest in collaborating with other COMSATS' member states for skill development and establishment of innovation centers in the country.

Participating in the Meeting as a representative of new Member State, **Dr. Adnan Zain Alsaggaf, Ministry of Higher Education and Scientific Research, Yemen**, expressed hoped to build collaborative ties with other COMSATS' member states in areas such as internet and cyber security, artificial intelligence and robotics as well as biomedical engineering.

Hon. Prof. Fanuel Tagwira, Permanent Secretary, Ministry of Higher and Tertiary Education, Science and Technology Development, Zimbabwe, informed that his country is aiming for Education 5.0 involving innovation and industrialization along with education, research, and community service. He went on to say that Zimbabwe has virtually established 06 innovation and 05 industrial hubs for the commercialization of scientific research and innovation related initiatives. He further informed that education, research and industrialization are the priority areas for Zimbabwe and looked forward to active collaborations in this connection with COMSATS' Network.

On the occasion, **Prof. M.H.A. Hassan, the Honorary Member of COMSATS Technical Advisory Committee (TAC),** stated that COMSATS is well placed to undertake trainings and capacity-building in areas of SDGs and Science Diplomacy niche. Further, he proposed showcasing the efforts, progress and achievements of COMSATS' member states with regard to COVID-19 for information and prospective collaboration.

Representatives of other international partner organizations participating in the Meeting appreciated the role of COMSATS in South-South Cooperation and expressed

willingness to advance cooperation under agreements signed with COMSATS.

Meeting Outcomes

The meeting resulted in revitalized commitment from the focal ministries of COMSATS' member states for supporting COMSATS.

The delegates called for and agreed on having stronger ties among scientists and researchers for solving common development challenges; effective cooperation and initiatives at highest levels for emergent situations, such as COVID-19 pandemic; scientific and academic exchanges; as well as developing strategies for addressing issues, such as food security and climate change.

Participating countries showed support towards COMSATS' role in providing a strong S&T cooperation platform to developing countries. The areas identified for cooperation and mutual support included: multilateral research, refugee management, Science Diplomacy training, data science, climate sciences, energy, post-pandemic preparedness, agriculture, biotechnology, food security and nutrition, capacity-building, knowledge economy, and SDGs. The next meeting of COMSATS Consultative Committee was scheduled to

be held in May 2021.

23rd COMSATS Coordinating Council Meeting (July 14, 2020)

The twenty-third meeting of COMSATS Coordinating Council was held virtually on 14th July 2020. The meeting was scheduled to be hosted by International Center for Chemical and Biological Sciences (ICCBS), Karachi, earlier during the year when the virus had started being identified in Pakistan that resulted in cancellation of the meeting due to safety concerns of the international participants.

The meeting was attended by the Council Members or their representatives from 19 Centres of Excellence of COMSATS, including BCSIR (Bangladesh), ICCES (China), TIB (China), CIF (Colombia), NRC (Egypt), UTG (The Gambia), CSIR (Ghana), ITS (Indonesia), IROST (Iran), ICENS (Jamaica), KazNU (Kazakhstan), NMC (Nigeria), ICCBS (Pakistan), CUI (Pakistan), AQU (Palestine), ITI (Sri Lanka), HIAST (Syria), TIRDO (Tanzania), and TUBITAK (Turkey). In addition, the meeting was attended by the officials of COMSATS Secretariat joining the meeting from Islamabad.

The meeting resulted in continued





exchange and networking; the Network was strengthened by two institutions (24 in total); renewed commitment and resolve to working together in regular and unprecedented circumstances; pledges of technical, financial and academic support. Here is a glimpse at the meeting deliberations.

Inaugural Session

The meeting was inaugurated by Prof. Dr. Ashraf Shaalan, Chairperson of COMSATS Coordinating Council, who appreciated the efforts made by COMSATS Secretariat for organizing the online meeting amid COVID-19 crisis. Prof. Shaalan hoped that the world will soon rise above the challenges posed by the ongoing pandemic through combined efforts. He welcomed the two new Centres of Excellence belonging to Indonesia and The Gambia to COMSATS Network. Welcoming the participants, the Executive Director COMSATS, Dr. S. M. Junaid Zaidi, remarked that this crisis has strengthened the resolve of COMSATS and its Coordinating Council to continue striving for the promotion of South-South and Triangular Cooperation in ST&I for

coming up with solutions to such and other problems of the developing world through all possible means.

In their remarks during the session, new members of the Council, Prof. Dr. Mochamad Ashari, Rector Sepuluh Nopember Institute of Technology (ITS), and Prof. Faqir Muhammad Anjum Chaudhry, Vice Chancellor of the University of The Gambia (UTG), expressed keen interest in benefitting from the Network membership.

Technical Deliberations

The technical deliberations were based on 11-point agenda of the Meeting. The implementation status of the decisions taken by the Council in its last meeting held at Tianjin Institute of Industrial Biotechnology (TIB), China, and Report of COMSATS' Annual Activity since that meeting were found to the Council's satisfaction. The Council expressed immense pleasure and satisfaction on the completion of COMSATS' 25 years of existence and appreciated the consistent support of the Government of COMSATS' host country, Pakistan, other Member

States and Centres of Excellence.

The COVID-19 pandemic constituted an important point of discussion, under which ideas and experiences, and technical undertakings of the centres were shared. The Council noted the devastating global impacts of COVID-19 and urged all the Council members to collaborate with one another and pool their expertise and resources in order to counter the COVID-19 pandemic through research and development. They also considered focusing their collective efforts on fields that would be relevant in addressing the socio-economic needs and challenges of the COMSATS' member states in post-COVID-19 world.

An in-house review showed an array of activities that COMSATS Centres of Excellence have been engaging in, with regard to their governments' responses to COVID-19, including:

- Indigenous solutions to preparing basic protective equipment, such as production and distribution of hand sanitizers and masks;
- Specialized research towards better

health safety such as Nanofiber Filters of high protection N95-N99/FFP2-FFP3 masks, ventilators for hospital use, and immunity boosting food products, etc;

- Studies on genetic variations and their correlation with the disease severity; progression clinical outcomes of the disease and genomes sequencing of the virus;
- Developing testing facilities as well as providing mass scale testing, as well as R&D on vaccines against COVID-19; and
- Awareness building activities for students and professionals and community integration in COVID-19 pandemic management

The Council members were pleased to learn about a high-level breakfast meeting convened by the Honourable Chairperson of COMSATS (President of Ghana) on the side-lines of the African Union (AU) Summit Meeting at Addis Ababa, Ethiopia. The Meeting was found helpful in paving the way for enhancing the membership of COMSATS from the African region.

Under different agenda items, the Council deliberated upon the ongoing projects and programmes, including COMSATS Centre for Climate and Sustainability (CCCS), postgraduate scholarships and post-doctoral fellowships offered by various Centres of Excellence, capacity building activities, Telehealth programme, activities of International Thematic Research Groups, publications, and other programmes for achieving SDGs.

The Council was pleased to learn that COMSATS' membership to the Alliance of International Science Organizations (ANSO) has been endorsed by its Governing Board, enabling COMSATS' member states and Centres of Excellence to participate in ANSO's activities.

Some recommendations by the Council to effectively achieve the Networking objectives pertained to:

Offers Sought and Extended During Post Coordinating Council Sessions

Extended

- BCSIR-Bangladesh: Nanotechnology, renewable energy, food safety, essential oil and industrial surfactant, herbal medicine and medicinal plant, biotechnology, biomedical, leather/shoe technology biomaterials, biochemical and bio fuel (bio refinery) materials, and metallurgical science and engineering.
- CERTe-Tunisia: Water technologies (with ICENS, Jamaica).
- CUI-Islamabad: Recommitment of standing offer of 100 postgraduate scholarships for students/researchers of COMSATS' Member States at all campuses of COMSATS University Islamabad (CUI), Pakistan.
- HIAST-Syria: tele-communication; signal processing and networking; mechanical and electronic system research on robotics; Artificial Intelligence, navigation, control system and mechatronics system; nanotechnology, material science, metallurgy and polymers; aeronautics, etc.
- ICCBS-Pakistan: Reiteration of offer of five (05) postdoctoral fellowships per year for students/researchers of COMSATS' Member States in the fields of Natural Product Chemistry, Medicinal Chemistry, Structural Chemistry, Stem Cell Research, Molecular Biology, and Pharmacology.
- ICCES-China: ANSO Scholarship for postgraduate education at the colleges or schools of the University of Science and Technology of China (USTC), the University of Chinese Academy of Sciences (UCAS) or institutes of CAS around China (<http://www.anso.org.cn/programmes/talent/scholarship/>).
- ICENS-Jamaica: Environmental geochemistry, trace elements in air particulate, heavy metal pollution in Jamaica, trace elements in animal/human tissue/ health, biogeochemical cycles, forensics, and trace and heavy metals in the marine environment.
- IROST-Iran: Design, production and evaluation of recombinant drugs; purification, characterization and anticancer activities of exopolysaccharide produced by isolated marine microalgae; extraction and characterization of neuroprotective compounds from marine microalgae; and improving technology of encapsulated herbal pesticides production of integrated test management; development of Hemodialysis Machine (with ITS, Indonesia).
- ITS-Indonesia: Artificial Intelligence, Robotics (with HIAST, Syria).
- NRC-Egypt: Physics, inorganic chemical industries and mineral resources (HIAST, Syria).
- RSS-Jordan: Environment and climate change, water resources, agriculture, health and economy, nuclear technologies (with ICENS, Jamaica).
- TIRDO-Tanzania: Energy efficiency with regard to equipment labeling and standards (with AQU, Palestine).
- Al-Quds-Palestine: Training sessions in the fields of its expertise for the benefit of Centres of Excellence/ Member States.
- CIF-Colombia: Training for other Member Countries / Centres of Excellence virtually in its areas of expertise.
- CUI-Pakistan and ICCES-China: Joint faculty exchange and fellowship programmes.
- All Centres of Excellence: On-demand virtual training programmes in the areas of their expertise.

Sought

- AQU-Palestine: Scientific exchange programs and knowledge-transfer
- CUI-Pakistan: Joint faculty exchange and fellowship programmes; joint research in robotics, artificial intelligence, national products and biotechnology (with ITS, Indonesia); climate change, environmentally sound technology, energy challenges, greenhouse gas and water related initiatives (with RSS, Jordan)
- ITS-Indonesia: Agro-Processing and Medicinal Plants, Biomaterials (with CUI, Pakistan)
- NMC-Nigeria: Modeling and simulation of climate change and environment (with ICCES, China); special programs and trainings in nanotechnology to be offered by Centres of Excellence for post-graduates and in-service trainees.
- NRC-Egypt: Medical research, waste management (with RSS, Jordan)
- TUBITAK-Turkey: Robotics, drug discovery, ICTs, molecular dynamics, joint PhD and post-doctoral.
- Academy of Scientific Research and Technology (ASRT), Egypt: aero-space, biotechnology and energy (with KazNU, Kazakhstan).
- AQU-Palestine: Energy efficiency.



- Member States and Centres of Excellence joining and supporting COMSATS Centre for Climate and Sustainability;
- Urge to Centres of Excellence to benefit from the postgraduate scholarships and post-doctoral fellowships available among the Centres;
- Continuing efforts for building capacity of the scientific community in its member states, especially through joint SDG-related projects and programmes prepared by the Centres of Excellence; and
- Emulating such digital health initiatives, such as COMSATS Telehealth in their member countries and institutions.

During the meeting, the status of constitution of the Technical Advisory Committee (TAC) was also presented which included nominations sought and received from Centres of Excellence and COMSATS Focal Points which after review and necessary consultation will be shared with the Council for approval.

A review of Administrative and Financial Matters of COMSATS made by Dr. Zaidi was endorsed by the Coordinating Council. The Council appreciated the payment of the Annual Membership Contribution by China, Jamaica,

Kazakhstan, Pakistan, Sri Lanka, and Nigeria since the last Council meeting. Moreover, the Centres pledged to play due role in sensitizing their respective governments to the importance of making sustained financial contribution to COMSATS' programmes.

It was decided that the next meeting of the Coordinating Council will be hosted by the International Centre for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, tentatively scheduled for March 2021. The Council members also agreed to meet through online meetings at least once a year.

Follow-up of the Decisions of the 23rd Coordinating Council Meeting of COMSATS

The decisions and recommendations of the meeting followed-up by COMSATS Secretariat pertained to a number of matters, briefly touched on in this section.

Capacity-building Events

The Council had advised COMSATS to continue capacity building activities in accordance with the needs and priorities of the scientific workforce of the Centres of Excellence and Member States. In this regard, COMSATS organized various capacity-building events during 2019-20,

most of which were held virtually due to the COVID-19 related travel restrictions. The capacity-building events co-organized/ sponsored during the period include (covered in later sections):

- Second African Symposium on Big Data, Analytics and Machine Intelligence and the 6th TYAN International Thematic Workshop "Data Science for Solution-driven and Sustainable Response to current developing world challenges" (3rd December 2020);
- Webinar within the framework of Sustainable Development Goal 2 (Zero Hunger) (30th November 2020);
- Webinar on Energy Efficiency and Cleaner Production Practices in Industry (25th November 2020);
- Webinar on Challenges of Rapid Urbanization in the Global South, organized by COMSATS (29th October 2020);
- Webinar on Breast Cancer Awareness: Give Hope, Save Lives, organized by COMSATS (29th October 2020);
- Webinar on Sustainable Water Governance in the Global South under Changing Climate, organized by COMSATS (8th October 2020);
- International Seminar on "Current Challenges: Imperative of South-South Cooperation" (online Webinar) (16th September 2020);
- Webinar on Challenges to Agriculture and their Solutions in the Global South (9th September 2020);
- Webinar on International Day of Clean Air for Blue Skies (7th September 2020);
- Webinar on Digital Health in COVID-19: Sharing Experiences of COMSATS' South Asian Member States (7th September 2020);
- International Seminar on "Youth Engagement for Global Action" organized by COMSATS in collaboration with COMSATS University Islamabad (CUI), Islamabad (12th August 2020);
- Webinar on "Impacts of Climate Change on South Asian Monsoon" (28

July 2020);

- xiii. Virtual training on Sexual, Reproductive and Maternal Health (SRMH) for telemedicine providers (24th July 2020).

Moreover, under the MoU signed with the Centre of Environmental Economics of the University of Chinese Academy of Sciences (CEE-UCAS), China, 14 Modules of the Belt and Road training Course entitled: 'Training on Sustainable Development and Leadership Enhancement', were organized by CEE-UCAS, in collaboration with COMSATS and the Alliance of International Science Organizations (ANSO), from 28th October 2020 to 3rd February 2021. The events enhanced the capacity of the participants belonging to Centres of Excellence and COMSATS member states, and facilitated the sharing of best practices. The training benefited 48 trainees from 13 COMSATS' member states, including Colombia, Gambia, Indonesia, Iran, Jamaica, Jordan, Kazakhstan, Pakistan, Palestine, Syria, Tanzania, Turkey, and Tunisia.

New Lecture Series Launched

Furthermore, COMSATS initiated an online lecture series on South – South and Triangular Cooperation for socio-economic development in the South, in

which eminent experts from member countries and international partner organizations are sharing their insights on how to effectively address the socio-economic needs of the developing countries through South – South and Triangular cooperation in science and technology.

Visitors from Network Members

Following UTG-The Gambia's pledge of actively participating in COMSATS' activities, Prof. Dr. Faqir Muhammad Anjum Chaudhry, Vice Chancellor, UTG, visited COMSATS Secretariat on 31st December 2020, with a view to explore the possibilities of collaboration with other Centres of Excellence, including CUI-Pakistan and ICCBS-Pakistan.

A two-member delegation of CUI visited Sri Lanka and held meeting with Director General of ITI on 20th January 2020, in order to discuss the study opportunities / scholarships at CUI available from the platform of COMSATS.

Establishment of 'COMSATS Joint Centre on Industrial Biotechnology (CCIB)' and COMSATS-ITS Center of Advance Research and Innovation on Artificial Intelligence, IoT and Robotics (CISARI - AIR)

Following its pledge to enhance collaboration with other Centres of Excellence, TIB-China has announced the establishment of 'COMSATS Joint Centre on Industrial Biotechnology (CCIB)', under the framework of the National Technology Innovation Center of Synthetic Biology (NIC-Synbio), at TIB with support of the Chinese Ministry of S&T and Tianjin local government. In this regard, Tianjin/Chinese government has already released funds for the establishment of the afore-mentioned centre, and a formal agreement between COMSATS and TIB will soon be signed, after which various programmes from the platform of COMSATS, including joint R&D activities, trainings and fellowships would be launched.

ITS-Indonesia announced the establishment of COMSATS-ITS Center of Advance Research and Innovation on Artificial Intelligence, IoT and Robotics (CISARI - AIR) at vicinity of ITS. The Centre would aim to initiate joint research and development cooperation among COMSATS member states in emerging technologies, such as big data analytics, internet of things (IoT), artificial intelligence, robotics, cloud computing, 3D printing, etc. The terms of cooperation in this regard are being discussed between ITS and COMSATS.



Scholarships

Following the pledge made by Centres of Excellence to avail the postgraduate scholarships available at CUI-Pakistan, 28 applications were received during the reporting period, all of which have been accepted by CUI and offered admissions. Moreover, the Nigerian researcher availing post-doctoral fellowship at BCSIR-Bangladesh successfully completed his fellowship and returned to his home country.

Alliance of International Science Organizations (ANSO) invited COMSATS, an ANSO Member, to recommend 4 students belonging to its Member States for availing scholarships for young students, announcement of which has been disseminated among the Focal ministries and Centres of Excellence.

Offers and Exchanges of Expertise

CIF-Colombia is designing a training course for the researchers belonging to other Member States/Centres of Excellence, which would be announced soon. During the Council meeting, TUBITAK-Turkey had offered to share its expertise with regard to combating COVID-19 with other members of the Network, which was done during online sessions held on 27th October 2020, and 15th December 2020. Moreover, in order

to facilitate collaboration on this subject, COMSATS organized a webinar on 'digital health in COVID-19: sharing experiences of COMSATS' South Asian member states' on 7th September 2020.

Activities of COMSATS Centre for Climate and Sustainability (CCCS)

COMSATS Centre for Climate and Sustainability (CCCS) was further strengthened with the addition of TIB-China, increasing the number of affiliated organizations to (24) twenty four. In this regard, the Executive Director COMSATS through letters and discussions encouraged all Centres of Excellence to ensure their active participation in the activities of CCCS. During the reporting period, CCCS organized nine (09) webinars in collaboration with various Centres of Excellence, focusing on 7 Sustainable Development Goals (SDGs): SDG-2 (Zero Hunger), SDG-3 (Good Health and Well-being), SDG6 (Clean water and Sanitation), SDG-7 (Affordable and Clean Energy), SDG-11 (Sustainable Cities and Communities), SDG-13 (Climate Action), and SDG-15 (Life on Land).

Activities of COMSATS Telehealth

During the afore-mentioned meeting, the Centres of Excellence were urged to replicate COMSATS Telehealth in their countries. In this connection,

opportunities of collaboration with RSS-Jordan were explored through several virtual meetings held between Pr. Medical Officer and Telehealth Coordinator at COMSATS Secretariat, Dr. Azeema Fareed, and officials of RSS.

Proposals Submitted and Funding Won

During the 23rd Council meeting, it was agreed that COMSATS Secretariat will facilitate the submission of the joint project proposals, having relevance to the Sustainable Development Goals, prepared by the Centres of Excellence to the donor agencies and international partner organizations for potential funding. In this regard, COMSATS had submitted some proposals to ANSO for joint research projects with the participation of several Centres of Excellence. Out of these proposals, the following two projects led by CUI-Pakistan and TUBITAK-Turkey have been approved by ANSO:

1. Title: "Mosquitome of Flying Syringes-Aedes aegypti and Aedes albopictus & their Fitness vis a vis their Competency to Transmit Infection With Changing Climate" Participation: CUI-Pakistan and institutions from China, Turkey and Thailand;
2. Title: "Energy and Raw Material Recovery from Treatment Sludge as a Conceptual of Zero Waste" Participation: TUBITAK-Turkey, TIRDO-Tanzania, AQU-Palestine and CUI-Pakistan.

Virtual Arrangement of 4th Consultative Committee Meeting

The Council deemed it important to continue the process of holding statutory body meetings as far and frequently as possible. As per the Council's suggestion to hold the COMSATS Consultative Committee meeting virtually keeping in view the present COVID-19 related travel restrictions, the 4th meeting of COMSATS





Consultative Committee was held virtually on 11th November 2020, under the chairpersonship of H.E. Chaudhry Fawad Hussain, Federal Minister for Science and Technology, Government of Pakistan.

Reconstitution of the Technical Advisory Committee (TAC) and Strengthening the Network

In light of the decision made during Council meeting, efforts are underway to re-constitute the COMSATS Technical Advisory Committee (TAC). Moreover, in light of the decision regarding the expansion of COMSATS' Network, COMSATS Secretariat is interacting with renowned research centres and universities in Spain, Yemen and Zimbabwe for possible induction in the Network.

Annual Membership Contribution

During the 23rd Council meeting, the Council members pledged to play due role in sensitizing their respective governments to the importance of making due and sustained annual membership contribution towards COMSATS. During the reporting period, AMC was received from China (US\$ 45,035), Kazakhstan (US\$ 20,000), and Nigeria (US\$ 10,000).

Presentation Sessions by the Network Members

As a follow up of 23rd Coordinating

Council Meeting, and in order to enhance interactions and collaborations among the Centres of Excellence for initiating joint programmes for the benefit of the member states, COMSATS organized 13 online sessions wherein the Centres of Excellence made presentations, inter alia, covering their ongoing activities and offers of collaboration with other Centers of Excellence in terms of joint research work/training opportunities/technology-transfer.

During these sessions:

- The Centres presented their activities with regard to their recent achievements and future aspirations. These, inter alia, covered R&D, capacity building, HR and infrastructure, academic and research outputs, joint projects and research, as well as their interest in and offers for joint collaborations.
- Common grounds of cooperation were explored for combating COVID-19.
- Based on earlier work and discussions, new Centres were announced during these sessions, including: COMSATS Joint Centre on Industrial Biotechnology (CCIB) by TIB, China; and COMSATS-ITS Center of Advance Research and Innovation on Artificial Intelligence, IoT and Robotics (CISARI – AIR) by ITS, Indonesia. Another COMSATS' joint centre on Biodiversity/Natural Products was proposed for furthering

research collaborations among COMSATS Centres of Excellence/ member states.

- The Centres of Excellence expressed interest in joint projects and R&D, which included areas like bioenergy consumption, deforestation, production of sugar crops, carbon footprint of agriculture, nuclear energy, food security, and informatics.
- Intellectual exchange was decided to continue including other means, such as series of lectures on 'South – South and Triangular cooperation for socio-economic development in the South' under which top scientists/experts would share insights on different topics under sustainable development and scientific cooperation.

Enhancement of Membership

Commission

During 2020, owing to the challenges posed by the pandemic, the campaigning for enhancing COMSATS' Commission was mostly carried out online. Significant inroads were made with regard to enhancement of COMSATS' membership. In this regard, a number of online Zoom meetings were held with ambassadors and dignitaries in Pakistan as well as from abroad were engaged from a number of countries. Some physical meetings resulted in the following interactions aiding COMSATS' efforts to enhance it Commission's Membership.

The following provides a bird's eye view of post-Coordinating Council sessions that spread over most part of the second half of 2020:

Session	Centres Presenting	Presentation made by
First Session 8th September 2020	Al-Farabi Kazakh National University (KazNU), Kazakhstan	Prof. Tlekkabul Ramazanov, Vice-Rector for Science & Innovations, KazNU
Second Session 15th September 2020	Iranian Research Organization for Science and Technology (IROST), Iran; International Center for Chemical and Biological Sciences (ICCBS), Pakistan	Dr. Alireza Allahyari, Director General for International Cooperation, IROST, Iran, and Prof. Dr. Farzana Shaheen made a presentation on behalf of Dr. Iqbal Chaudhry, Director ICCBS,
Third Session 22nd September 2020	Centro Internacional de Fisica (CIF), Colombia	Prof. Eduardo Posada, Director, CIF, Colombia
Fourth Session 29th September 2020	Tanzania Industrial Research and Development Organization (TIRDO), Tanzania; National Research Centre (NRC), Egypt; National Mathematical Centre (NMC), Nigeria	Dr. Lugano Wilson, Director of Engineering Development, TIRDO, Tanzania Prof. Hosam El-Sayed, Assistant Vice President for Research, NRC, Egypt Prof. Stephen E. Onah, Director, NMC, Nigeria
Fifth Session 13th October 2020	Al-Quds University (AQU), Palestine	Dr. Radwan F. H. Qasrawi, Assistant Professor of Information & Communication Technology, AQU, Palestine
Sixth Session 20th October 2020	International Center for Climate and Environment Sciences (ICCES), China; COMSATS University Islamabad (CUI), Pakistan	Prof. Zhaohui Lin, Director, ICCES, China Prof. Dr. Muhammad Tabassum Afzal, Rector, CUI, Pakistan
Seventh Session 27th October 2020	the Scientific and Technological Research Council of Turkey (TUBITAK), Turkey; Council of Scientific and Industrial Research (CSIR), Ghana	Prof. Dr. Orkun Hasekioğlu, Advisor to the President, TUBITAK, Turkey Dr. Daniel Asenso-gyambibi, Director CSIR-Building and Road Research Institute, CSIR, Ghana
Eighth Session 3rd November 2020	Royal Scientific Society (RSS), Jordan; Sepuluh Nopember Institute of Technology (ITS), Indonesia	Eng. Abeer Arafat, Assistant to the President for Organizational Knowledge Documentation, RSS, Jordan, Prof. Bambang Pramujati, Vice Rector of Research, Innovation, Partnership and Alumni, and Dr. Sri Fatmawati, Assistant Professor, ITS, Indonesia
Ninth Session 17th November 2020	International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica	Mr. Charles N. Grant, Director General, ICENS, Jamaica
Tenth Session 24th November 2020	Water Research and Technologies Centre (CERTE), Tunisia Tianjin Institute of Industrial Biotechnology (TIB), China Sepuluh Nopember Institute of Technology (ITS), Indonesia	Prof. Ahmed Ghrabi, Director General, CERTE, Tunisia Prof. Jibin Sun, Deputy Director-General, TIB, China Prof. Bambang Pramujati, Vice Rector of Research, Innovation, Partnership and Alumni, Sepuluh Nopember Institute of Technology, ITS, Indonesia
Eleventh Session 1st December 2020	Industrial Technology Institute (ITI), Sri Lanka; University of The Gambia (UTG), The Gambia	Dr. Radhika Samarasekera, Director General, Industrial Technology Institute, ITI, Sri Lanka Prof. Faqir Muhammad Anjum, Vice Chancellor, UTG, The Gambia
Twelfth Session 8th December 2020	Embrapa Agrobiologia, Brazil; Industrial Research and Consultancy Centre (IRCC), Sudan	Dr. Robert Boddey, Research Scientist at Embrapa Agrobiologia, Brazil Dr. Omer Kamal, Researcher, IRCC, Sudan
Thirteenth Session 15th December 2020	Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh	Dr. M. Nashir Uddin, Director Planning and Development, BCSIR, Bangladesh

The officials of Secretariat along with the Executive Director COMSATS met the Chairman of the Presidency of Bosnia and Herzegovina, H.E. Mr. Sefik Dzaferovic, on 4th November 2020, at a dinner hosted by the Ambassador of Bosnia and Herzegovina to Pakistan, H.E. Mr. Sakib Foric, in the honor of Honourable Chairman. During the brief meeting, H.E. Mr. Dzaferovic was apprised of COMSATS' programmes and was extended the offer of COMSATS' membership. On the occasion, the Honourable Chairman was also presented COMSATS' membership documents.

H.E. Mr. Chad Blackman, Barbados Ambassador and Permanent Representative to the United Nations and other international organizations based in Geneva, Switzerland; and Senator Hazel Thompson-Ahye of Trinidad and Tobago; H.E. Mr. Ahmad Shakir Qarar, a Deputy Head of Mission, Embassy of Islamic Republic of Afghanistan in Islamabad; H.E. Dr. Aleksandar Borisov Parashkevov, Ambassador Extraordinary and Plenipotentiary of Bulgaria to Pakistan; H.E. Mr. Volodymyr Lakomov, Ambassador of Ukraine to Pakistan; and H.E. Mr. Bernhard Schlagheck,

Ambassador of Germany to Pakistan, were apprised of COMSATS and the ongoing work in member states and a case was for them to encourage their governments made to join COMSATS as member states.

As part of membership campaign, COMSATS has planned to reach out to the Central Asian states, such as Azerbaijan, Uzbekistan and Turkmenistan. Respective ministers of Science and Technology would be approached to sensitize them about COMSATS' activities and the benefits of joining COMSATS.

Network of International S&T Centres of Excellence

Following the approval of Chairperson Coordinating Council, Prof. Dr. Ashraf Shaalan, and endorsement by the members of COMSATS Coordinating Council, on 28th June 2020, two Centres from Gambia and Indonesia have been inducted to COMSATS' Network of International S&T Centres of Excellence. The addition of these two Centres, i.e., University of The Gambia (UTG) – The Gambia, and Sepuluh Nopember Institute of Technology (ITS) – Indonesia has increased the number of COMSATS Network members to reach twenty-four (24).

ITS and UTG are among the top

educational/research institutions in their respective countries, and there is a considerable overlap between the activities of these institutions and COMSATS' Centres of Excellence indicating room for collaboration in the fields of mutual interest.

In connection with its membership process, a two-member delegation of ITS, Indonesia, had visited COMSATS Secretariat earlier this year.

The request for the induction of ITS and UTG in COMSATS' Network was to be considered during the 23rd Meeting of COMSATS Coordinating Council (2-4 March 2020, Karachi) which was inevitably postponed due to the global COVID-19 outbreak. Therefore, the duly filled-in

proforma for technical evaluation of ITS and UTG received from the two centres were circulated among the members of Coordinating Council for their advice/feedback regarding the suitability of ITS and UTG for induction in COMSATS' Network.

ITS and UTG were formally inducted in the COMSATS' Network of International S&T Centres of Excellence, subsequent to the endorsement of the members of COMSATS Coordinating Council and formal approval by the Chairperson Coordinating Council, on 28th June 2020.

Later, the Certificates of Membership to COMSATS Network were issued to the afore-mentioned Centres by the Executive Director COMSATS.

STRENGTHENING SOUTH-SOUTH AND TRIANGULAR COOPERATION

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- Meetings with Diplomats of Potential Member States 20

STRENGTHENING SOUTH-SOUTH AND TRIANGULAR COOPERATION

One of the 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 triangular cooperation in a number of fields, including education, training and research, climate change, SDGs and more.



Meetings with Diplomats and Officials from COMSATS Member States

H.E. Khadija Mohamed Almakhzoumi, Ambassador of Somalia to Pakistan (January 13, 2020)

The Somali Ambassador was appreciative of COMSATS' efforts for the advancement of science and education in the developing world. She expressed willingness to benefit from the various programmes of COMSATS and to further cooperation in the area of higher education.

Somalia was invited to benefit from opportunities of scholarships/ fellowships available with COMSATS' Network to help build and sustain scientific capacities as well as to increase access to quality education and promote cross-culture experiences. Twenty-five (25) post-

graduate scholarships were also allocated for Somali students at COMSATS University Islamabad (CUI) in various disciplines.

Further to facilitate strengthening of higher education sector of Somalia, it was proposed that a delegation comprising of Vice Chancellors and/or senior officials

from universities in COMSATS' member states could visit Somalia for a first-hand review of the sector to make informed recommendations.

The idea of establishing a top-class R&D center in the field of Information Technology in Somalia having a focus on precision agriculture, e-agriculture, early





warning systems for floods and droughts, and e-education was also put forth by Dr. Zaidi which was received with due acknowledgment by the Ambassador. It was mutually agreed that proposal from COMSATS shall be forwarded to the Government authorities as well as private sector of Somalia through Embassy to help materialize this idea. Prospects of financial patronage from international donor agencies would also be explored.

The Ambassador also took keen interest in the COMSATS' Telehealth Programme and discussed possibility of its replication in Somalia in order to strengthen the healthcare sector of the country.

H.E. Dr. Tarek Dahroug, Ambassador of Egypt to Pakistan (July 21, 2020)

The Honourable Ambassador was accompanied by Mr. Ibrahim Said Ibrahim, Deputy Head of Mission (DHM) at the Embassy. During the meeting, discussions were held to enhance and further strengthen the existing cooperation between COMSATS and Egypt. Dr. Zaidi stated that COMSATS highly values its ties with Egypt and appreciate the country's active participation in various scientific programmes and activities of the Organization.

During the discussions, Dr. Zaidi also proposed the establishment of COMSATS University in the New Administrative Capital (NAC) of Egypt as well as extended offer of assistance for formulation of Egypt's technology policy. Amb. (R) Fauzia Nasreen, Advisor (SDGs) at COMSATS, suggested that a virtual cell to discuss and brainstorm ideas for the formulation of ST&I policies post COVID-19 may be formed jointly by the Ministries of S&T of Pakistan (COMSATS Focal Point) and Egypt.

The Ambassador was receptive of various proposals discussed during the meeting and expressed interest in enhancing cooperation between Pakistan and Egypt in cyber security, ST&I, and education

through COMSATS.

H.E. Mr. Borhene El Kamel, Ambassador of Tunisia to Pakistan (January 21, 2020)

The meeting with H.E. Mr. Borhene El Kamel was held at his office in the Embassy of Tunisia in Islamabad. The brief meeting with the new Ambassador was held to apprise him of COMSATS' programmes, linkages at national and international level, on-going projects and future initiatives as well as to seek the patronage of His Excellency's office for building and furthering the cooperation avenues between COMSATS and Tunisia.

A key point of discussion during the meeting was cooperation in higher education sector which transpired from the briefing by Dr. Zaidi on COMSATS' Scholarship Programme.

H.E. U. L Niyas, Acting High Commissioner of Sri Lanka to Pakistan (March 11, 2020)

Dr. Zaidi apprised the Acting High Commissioner and his associates of the ongoing activities and future plans of COMSATS. He acknowledged and appreciated the active involvement of the Sri Lankan Industrial Technology Institute (ITI) in the international programmes and activities of COMSATS.





Reviewing the on-going collaboration taking place between COMSATS and Sri Lanka, the Executive Director requested the Government of Sri Lanka to depute a suitable officer/expert to work at COMSATS Secretariat on secondment in order to initiate specific programmes aimed at addressing the socio-economic needs of Sri Lanka.

The Acting High Commissioner appreciated COMSATS' activities and achievements in the domains of promoting cooperation in science and technology. He expressed his country's interest in availing the scholarships and fellowships offered by COMSATS Centres of Excellence, including CUI. He also pledged active participation of Sri Lanka in the activities of COMSATS Centre for Climate and Sustainability (CCCS).

Furthermore, the prospects of establishing COMSATS University on science and technology in Sri Lanka were also discussed during the meeting.

Meetings with Diplomats of Potential Member States

H.E. Mr. Volodymyr Lakomov, Ambassador of Ukraine to Pakistan (January 21, 2020)

Ukraine's good standing in the field of Information Technology is a potential link of cooperation for COMSATS that has made a mark in the afore-mentioned

domain over the years.

The brief meeting with the Ambassador was aimed at apprising him of COMSATS' programmes, linkages at national and international level, on-going projects and future initiatives as well as to seek the patronage of His Excellency's office for building the cooperation avenues between COMSATS and Ukraine.

H.E. Mr. Bernhard Schlagheck, Ambassador of Germany to Pakistan (January 23, 2020)

The meeting held with the Ambassador was aimed at building cooperation with Germany for seeking patronage and broadening COMSATS' international activities within the framework of triangular cooperation and United Nations 2030 Global Agenda.

During the meeting, Dr. Zaidi briefed the Ambassador about COMSATS' S&T-related engagements with different institutions and state-owned scientific departments in its Member States. H.E. Mr. Schlagheck was also apprised of COMSATS' initiatives in the field of health, ICTs, higher education and climate change as well as recent engagements with international bodies such as UNOSSC and Commonwealth. H.E. Mr. Schlagheck lauded COMSATS for its innovative approach to bring about sustainable





development in the Global South.

Support of the Ambassador's office was sought for the following proposals:

- Establishment of top-class research centres in COMSATS' member states in contemporary areas with the support of German institutions and development agencies.
- Placement of German expert(s) on secondment at COMSATS Secretariat for consultancy and advice on COMSATS' regional and international programs. In this connection, it was informed that experts from China and Nigeria are already on board.

H.E. Dr. Aleksandar Borisov Parashkevov, Ambassador Extraordinary and Plenipotentiary of Bulgaria to Pakistan (March 13, 2020)

Visit to His Excellency's office was aimed at acquainting him with COMSATS' operations as well as to explore avenues of cooperation with Bulgaria in areas of mutual interest.

During the brief meeting, the matter of Bulgaria's possible accession to COMSATS was discussed. The Honourable Ambassador assured of his full support for expediting the membership process. Dr. Parashkevov also expressed interest in collaborating with COMSATS' Network for expert-exchanges, faculty development, training and capacity-building of scientific workforce.

H.E. Mr. Ahmad Shakir Qarar, DHM, Embassy of Afghanistan in Islamabad (October 08, 2020)

Dr. Zaidi expressed COMSATS' strong desire to have Afghanistan as its Member State in order to aid the Republic's science and technology-led development. Understanding Afghanistan's needs to establish strong connections and synergies with institutions around the globe especially from countries having similar development challenges, Dr. Zaidi highlighted the role that COMSATS can play to build linkages amongst academic and scientific institutions of Afghanistan and other developing countries through its various platforms and networks.

Dr. Zaidi noted that programs in higher

education and scientific cooperation can be the starting point for building strong relationship between Afghanistan and Pakistan, as well as other Member States of COMSATS. In connection with this, he offered support to host a delegation of professors from Afghan universities to visit Pakistani institutions and explore avenues of cooperation and to build linkages between academic institutions of the two countries.

Mr. Qarar expressed his strong resolve to create scientific and academic linkages between Afghanistan and Pakistan. He informed that higher education institutions, such as the University of Nangarhar, Kabul University and University of Herat, to name a few, have good faculty of science and well-suited for international linkages.

Cognizant of the healthcare needs of the people of Afghanistan, Dr. Zaidi offered support to the Afghan people through COMSATS Telehealth (CTH) program (ehealthcomsats.com), which is a success due to its reliance on information and communication technologies as well as time-tested standard operating procedures supporting basic and specialist medical consultation in distant locations. Mr. Qarar appreciated the idea and pledged to consult the Afghan health department back home in order to build synergies and to establish a viable health solution for Afghan people.

H.E. Mr. Sefik Dzaferovic, Chairman of the Presidency of Bosnia and Herzegovina (November 04, 2020)

During the brief meeting with the Chairman at a dinner hosted by the Embassy of Bosnia and Herzegovina in Islamabad, H.E. Mr. Dzaferovic was apprised of COMSATS' programmes and was extended the offer of COMSATS' membership. On the occasion, the Honourable Chairman was also presented COMSATS' membership documents.

COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

• Centre for Environmental Economics (CEE), University of Chinese Academy of Sciences (UCAS)	24
• European Union Pakistan	25
• International Centre for Training and Development (ICTD)	25
• Chinese Ministry of Science and Technology (MoST)	25
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• United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)	28
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• The World Academy of Sciences (TWAS)	28
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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 Se&T community in developing countries.



Centre for Environmental Economics (CEE), University of Chinese Academy of Sciences (UCAS)

During July 2020, COMSATS established cooperative ties with the University of Chinese Academy of Sciences (UCAS) through signing an Agreement with its umbrella institute, the Centre for Environmental Economics (CEE). Both COMSATS and UCAS are members of the Alliance of International Science Organizations (ANSO) of China.

The partnership Agreement signed by Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and Director CEE-UCAS, Prof. Desheng Wu, aims to promote educational and research activities among CEE-UCAS, COMSATS' member states and Network.

According to the Agreement, the two sides



shall undertake joint research activities, exchange publications and information material through mutually agreed channels, conduct capacity-building activities, as well as secure funding from potential international donor agencies for the collaborative projects.

Subsequent to the signing of the Agreement, a virtual meeting was held on 27th July 2020, to chalk out modalities of the partnership. The two sides reached consensus on engaging COMSATS' Centres of Excellence and relevant organizations in COMSATS Member

States for joint research in areas of artificial intelligence, environmental issues, risk management, mathematical sciences, computer-based systems, and green supply chain, among others.

Furthering the cooperation, COMSATS joined hands with UCAS and ANSO for a three-month long online 'Training on Sustainable Development and Leadership Enhancement' that commenced from 28th October 2020.

The training sessions conducted by eminent experts from Canada, China, Denmark, Montenegro, Sweden, and USA, benefitted participants from across the globe, including 48 from various Centres of Excellence of COMSATS in 13 countries (Colombia, The Gambia, Indonesia, Iran, Jamaica, Jordan, Kazakhstan, Palestine, Pakistan, Syria, Tanzania, Tunisia, and Turkey), as well as officials from COMSATS Secretariat.

European Union Pakistan

With a view to advancing the cooperation with European Union Pakistan, H.E. Ms. Androulla Kaminara, the new Ambassador of the European Union to Pakistan, was invited for a meeting at COMSATS Secretariat. Her Excellency was accompanied by Ms. Anne Marchal, Deputy Head of Mission at the European Union Delegation to Pakistan, for the

meeting that was held on 20th February 2020, in the presence of senior COMSATS' officials.

It was informed during the meeting that with the aim to promote research and innovation-led economic growth in its Member States, COMSATS aspires setting-up regional hubs in cutting-edge areas of science and technology. Dr. Zaidi also highlighted the role being played by COMSATS Centres of Excellence for the materialization of such projects. Taking note of this, Ms. Kaminara stated that strong academic linkages are at the core of such initiatives which also need a prominent place in a country's policies. Ambassador Kaminara considered capacity-building of the scientists and technicians a key factor in this connection. She also informed that EU is currently collaborating with the National Vocational & Technical Training Commission (NAVTTTC), Government of Pakistan, for conducting vocational trainings in the country.

Furthermore, Ms. Kaminara considered programmes such as Horizon 2020 of European Union (EU) important for aiding S&T-related projects. She expressed interest in working with COMSATS' member states to help attract funding and generate sustainable solutions for addressing climate crisis.

International Centre for Training and Development (ICTD)

Since its inauguration in 2019 under an MoU between COMSATS and the American Institute of Pakistan Studies (AIPS), ICTD is building capacities in areas of climate change, intellectual property rights, higher education and leadership, and energy policy. During the reporting period, ICTD held following trainings, the details of which are covered in Chapter 4:

- Lecture on ranking and universities – importance and challenges, January 03, 2020.
- Interactive session on the ranking and quality assurance of universities, February 18, 2020.

Chinese Ministry of Science and Technology (MoST)

COMSATS' interactions with the Chinese Ministry of Science and Technology (COMSATS' Focal Point) dates back to 1994 when China became a Member State. During 2020, this connection further strengthened through signing of a Memorandum of Understanding.

Various steps of cooperation envisaged in the MoU are strengthening STI collaboration and exchanges; boosting STI people-to-people exchange; establishing joint laboratories for high-level scientific study and collaborative research and development; and engaging in science park cooperation and facilitating technology transfer, and more.

As a result of this partnership agreement, MoST is providing patronage to the Tianjin Institute of Industrial Biotechnology (TIB) of Chinese Academy of Sciences – one of the twenty-four COMSATS Centres of Excellence – in establishing the COMSATS Joint Centre for Industrial Biotechnology. Such a Centre, once established, would give a great boost to agriculture, textiles and





pharmaceutical industries and would help integrate ecofriendly practices in COMSATS member states.

Furthermore, Torch Hi-tech Industry Development Centre of MoST is facilitating establishment of S&T Park on Biotechnology in Jhelum District of Pakistan. To discuss its modalities, a virtual meeting was also held between COMSATS and the senior officials of the Torch Hi-tech Industry Development Centre on 3rd June 2020. As follow up of the discussions, the Torch Centre invited Executive Director COMSATS to virtually address 'The Belt and Road Initiative Scientific and Technological Park Forum', part of the Zhongguancun Forum (17-19 September 2020, Beijing).

National Centre for Physics

Under an Agreement with the NCP signed in 2016, COMSATS has been providing joint fellowships to young scientists from COMSATS' member states apart from supporting joint research projects between NCP and scientific institutions in COMSATS' member states; and facilitating information sharing, scientific exchanges and technology-transfer.

During the reporting period, Dr. Raphael Mmaduka Obodo, a PhD scholar from the University of Nigeria, completed a part of his research work at the National Centre for Physics (NCP), Pakistan, under

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

In his research, Dr. Obodo studied effects of varying doses of copper ion irradiation on the properties of nanostructured nanowires. His research has led to the understanding that low radiation doses help maintain the electrochemical properties of nanostructures having wide electrical, nanoelectromechanical and optoelectronics applications. Dr. Obodo's research published in reputable international journal Science Direct, can be accessed here: <https://doi.org/10.1016/j.mset.2019.10.006>.

National Disaster Management Authority (NDMA)

On 16th October 2020, a Memorandum of Understanding was signed between COMSATS' flagship project, COMSATS Internet Services (CIS), and the National Disaster Management Authority (NDMA) of Government of Pakistan, with an aim to support tele-health services and trainings in natural and human-induced disasters.

NDMA has been working to enhance disaster resilience in Pakistan and is the leading policy and coordination body for combating natural and human-induced disasters in Pakistan.

Dr. S.M. Junaid Zaidi, Executive Director COMSATS, and Mr. Muhammad Idrees Mehsud, Member DRR, NDMA, signed the agreement in a ceremony held at NDMA, Prime Minister's Office, Government of Pakistan. Lieutenant General Muhammad Afzal, Chairman NDMA; Prof. Dr. Ghazna Khalid, Member of the Parliament and Member Task Force on COVID-19, Ministry of Science and Technology, Government of Pakistan; along with representatives from both sides witnessed the signing of the agreement.

The guiding principle of the MoU is to facilitate the provision of tele-health services through the Resource Center at Isolation Hospital and Infectious Diseases Treatment Centre (IHITC) Islamabad. Towards this end, CIS shall help mobilize resources and build the technical capacity of IHITC. Furthermore, through this MoU, training activities shall also be carried to help build the capacity of the personnel in various aspects pertaining to natural and human-induced disasters.

South Centre

COMSATS further strengthened its working relations with the South Centre through signing an MoU on 3rd September 2018, that entails cooperation in various regional and cross-regional initiatives as well as exchange of information and technical resources among common member states.

During 2020, an article on "COVID-19 Crisis and Developing Countries: Digital Health Perspective" authored by Ambassador (R) Fauzia Nasreen, Advisor (SDGs); Dr. Azeema Fareed, Principal Medical Officer; and Ms. Huma Balouch, Sr. Assistant Director (Programmes), COMSATS Secretariat was featured in SouthViews of The South Centre.

The article explored digital health-developing countries relationship and established the significance and efficacy of digital tools and mechanisms for bringing about the required reforms in the healthcare systems to help deal with the public health issues in the post COVID-19 period. Pakistan's case study of digital health to support the pandemic management was also discussed in the article. The article can be accessed here: <https://www.southcentre.int/southviews-no-198-8-june-2020/>.

United Nations Development Programme (UNDP)

On 8th January 2020, a virtual meeting was held between COMSATS and United Nations Development Programme (UNDP) officials took place as a result of the Agency's deep interest in COMSATS' forthcoming General Meeting and Accra Forum on S&T for Sustainable Development to be held under the patronage of Hon. Nana Akufo-Addo, President of Ghana and Chairperson of COMSATS. However, the two high-level events were later postponed due to COVID-19 pandemic.

From COMSATS' side, the meeting was attended by Dr. S.M. Junaid Zaidi, Executive Director; Ambassador Shahid Kamal, Advisor (Climate Change); Mr. Nisar Ahmad, Deputy Director (Systems); and Mr. Farhan Ansari, Senior Assistant Director (Programmes). Mr. Abdullah Alkulaib, Regional Specialist, Regional Bureau for Africa at UNDP; and Ms. Ronata, participated from the other side.

Familiarizing the UNDP officials with COMSATS and its statutory activities, Dr. Zaidi and Ambassador Kamal shed light on the objectives, expected level of participation, and anticipated outcomes of the Accra Forum. They considered the participation and support of the relevant agencies of United Nations crucial for realizing the objectives of the event. The UNDP officials took keen interest



in the event, and expressed willingness to cooperate with COMSATS and the Government of Ghana in this regard. The two sides also discussed the specific areas of science and technology to be covered by the event.

Further during the discussions, Mr. Abdullah Alkulaib informed about UNDP's Accelerator Lab project, which is active in 50 countries, including 30 in African region. The project is focused at scaling up the grass-root technologies for facilitating the development of countries of the South.

United Nations Office for South-South Cooperation (UNOSSC)

COMSATS agreement with UNOSSC signed in November 2018 provided an impetus to South-South cooperative activities of COMSATS. During July-August 2020, COMSATS was featured as the 'Partner of the Month' by South-South Galaxy Platform of the United Nations Office for South-South Cooperation (UNOSSC) as part of its initiative to promote organizations on their exceptional South-South and Triangular cooperation efforts.

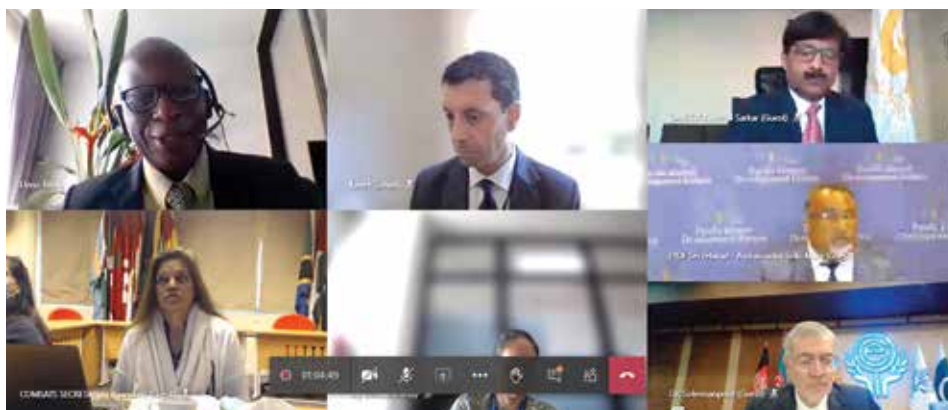
COMSATS was promoted on the social media channels of South-South

Galaxy and UNOSSC. This was done by highlighting the organization's vision, mission and objectives, good practices on South-South and Triangular cooperation, aided by visual material, information on key partners, and publications. COMSATS' profile and initiatives were also projected in South-South Galaxy's bi-monthly newsletter (<https://www.southsouth-galaxy.org/comsats-south-south-cooperation-partner-of-the-month/>).

In addition to this, South-South Galaxy platform of UNOSSC regularly shared information material on COMSATS Centre for Climate and Sustainability (CCCS) and its events on Galaxy portal as well as its social media network.

During the reporting period, COMSATS also participated in the following events organized by UNOSSC in partnership with other international organizations (details in Chapter 5):

- 2020 UN Regional South-South and Triangular Cooperation Focal Points Network Retreat, December 15, 2020.
- Webinar on "Regional, Sub-regional and Interregional Organizations in the Global South as Actors in Responding to COVID-19", July 15, 2020.
- 3rd Asia-Pacific Forum on South-South and Triangular Cooperation



themed on “The Role of South-South Cooperation in Building Back Better from COVID-19 Pandemic in the Asia and the Pacific”, November 25, 2020.

University for Sustainability

Based on similar mandates, COMSATS and the University for Sustainability announced a partnership to collaboratively advance science, technology and innovation for sustainable development and the promotion of peaceful coexistence necessary to accelerate a just and humanitarian transformation to sustainable development.

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

COMSATS established strong working relations with UNESCAP through signing an MoU on 20th December 2017. During the reporting period, COMSATS participated in the 3rd Asia-Pacific Forum on South-South and Triangular Cooperation held under the theme “The

Role of South-South Cooperation in Building Back Better from COVID-19 Pandemic in the Asia and the Pacific”, on 25th November 2020. The forum was jointly organized by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP); the United Nations Office for South-South Cooperation (UNOSSC); the Government of Indonesia; and the Thailand International Cooperation Agency (TICA), Ministry of Foreign Affairs of Thailand (details in Chapter 5).

Furthermore, Mr. Tengfei WANG, Economic Affairs Officer, Trade, Investment and Innovation Division, UNESCAP, also participated in the fourth Consultative Committee Meeting of COMSATS as an observer (details in Chapter 1).

United Nations Educational, Scientific and Cultural Organization (UNESCO) Pakistan

During 2020, COMSATS cooperation with UNESCO Pakistan resulted into an event held to commemorate World Science Day

for Peace and Development (details in Chapter 7).

Moreover, Mr. Raza Shah, National Professional Officer (Natural Sciences), UNESCO Pakistan, also participated in the fourth Consultative Committee Meeting of COMSATS as an observer (details in Chapter 1).

The World Academy of Sciences (TWAS)

COMSATS partnered with TWAS Young Affiliates Network (TYAN), TWAS Sub-Saharan Africa Regional Partner (TWAS SAREP), TWAS Latin America and the Caribbean Regional Partner (TWAS LACREP), TWAS Arab Regional Partner (TWAS-AREP), and Association for Computing Machinery – Women Europe (ACM-W) for holding 2nd African Symposium on Big Data, Analytics and Machine Intelligence and the 6th TYAN International Thematic Workshop “Data Science for Solution driven and Sustainable Response to current developing world challenges”, in December 2020 (Chapter 4).

International Centre for Genetic Engineering and Biotechnology (ICGEB)

During 2020, COMSATS’ interaction with ICGEB came in the form of participation of a representative of the Organization as an observer in the fourth Consultative Committee Meeting of COMSATS held in November 2020 (details in Chapter 1).

S&T AND SDGS RELATED EVENTS

- Lecture on Ranking and Universities – Importance and Challenges (January 03, 2020) 30
- Lecture on Belt and Road Initiative and its Implications on Sustainable Development in Pakistan (January 15, 2020) 31
- Roundtable dialogue on Sino-Pak Agriculture Cooperation – Way Forward (January 20, 2020) 31
- Session on University Ranking & Quality Assurance (February 18, 2020) 32
- Startup Founder Workshop on How to Build Successful Team and Businesses (March 03, 2020) 32
- Awareness Talk on Coronavirus Preparedness in the Workplace (March 09, 2020) 33
- Webinar on Role and Challenges of Youth in Global Crisis – COVID-19 (May 04, 2020) 33
- Webinar on Climate Change Risks and Impacts on Vulnerable Communities Post COVID-19 (July 08, 2020) 34
- Webinar on Impacts of Climate Change on South Asian Monsoon (July 28, 2020) 35
- International Webinar on Digital Health in COVID-19: Sharing Experiences of COMSATS' South Asian Member States (September 07, 2020) 35
- Webinar on Challenges to Agriculture and their Solutions in the Global South (September 09, 2020) 37
- Webinar on Sustainable Water Governance in the Global South under Changing Climate (October 08, 2020) 38
- Training Workshop on Becoming Internationally Recognized SIYB Trainer (October 26 - November 05, 2020) 38
- Webinar on Challenges of Rapid Urbanization in the Global South (October 29, 2020) 39
- Webinar on Energy Efficiency and Cleaner Production Practices in Industry (November 25, 2020) 39
- 2nd African Symposium on Big Data Analytics and Machine Intelligence & 6th TYAN International Thematic Workshop “Data Science for Solution driven and Sustainable Response to Current Developing World Challenges” (December 03 – 04, 2020) 39

S&T AND SDGs RELATED EVENTS

Capacity-building activities are an important feature of COMSATS' programmes aimed at strengthening 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 accomplishment of SDGs and their various targets. A new component in the schema of events this year has inevitably been COVID-19, also reflected in this Chapter.



Lecture on Ranking and Universities – Importance and Challenges (January 03, 2020)

COMSATS in collaboration with the Inter University Consortium for the Promotion of Social Sciences Arts and Humanities (IUCPSS) and the International Center for Training and Development (ICTD)

organized a lecture on “Ranking and Universities – Importance and Challenges” at COMSATS Secretariat Islamabad, on 3rd January 2020.

Delivered by Prof. Syed Sohail Hussain Naqvi (Rector of University of Central Asia – Kyrgyzstan and former Executive Director of the Higher Education Commission of Pakistan, the lecture had

the participation of Vice Chancellors from the public and private sector universities, senior academicians, and several former employees of Higher Education Commission (HEC) of Pakistan.

In his lecture, Prof. Naqvi discussed various ranking parameters used by the global ranking organizations. He remarked that institutional rankings apart from teaching and research are also important





for standing out with respect to academic excellence. While appreciating the progress of new educational set-ups, Prof. Naqvi shared his experience of working with the Lahore University of Management Sciences (LUMS) as the Vice Chancellor of the University.

Lecture on Belt and Road Initiative and its Implications on Sustainable Development in Pakistan (January 15, 2020)

COMSATS and the Global Think Tank Network (GTTN) organized the first lecture under their joint Distinguished Guest Lecture Series on 15th January 2020. Senior Advisor at Flint Global and a former Europe Minister of Portugal, Mr. Bruno Macaes, delivered the lecture on “Belt and Road Initiative and its Implications on Sustainable Development in Pakistan”.

The lecture was attended by a number of officials from academia, COMSATS Secretariat and GTTN, including Dr. S. M. Junaid Zaidi, Executive Director COMSATS; Mr. Owais Ahmad Ghani, Former Governor for Balochistan & KPK; Dr. Shoaib Suddle, Pakistan’s Former Federal Tax Ombudsman; Dr. Akram Sheikh, Chairman of the Board – GTTN and former Federal Minister/Deputy Chairman Planning Commission of Pakistan; Mr. Amer Hashmi, President & Member of the Board – GTTN; Ms. Najma Pirzada, Managing Editor Global Village Space Publications; Mr. Ghalib Iqbal, Ex. Ambassador to France; Dr. Saifullah Awan, National University of Science and Technology (NUST), Islamabad; Dr. Ansar Rajput, Capital University; and Ms. Shaheen Rasul, GTTN.

In his lecture, Mr. Macaes explored various dynamics of BRI relating to the economic, commerce and geopolitical aspects of this

grand project. It was delineated that the project is set to form new value chains involving major parts of Asia. BRI, it was noted, is going to improve China’s access to world markets, create more complex value chains and achieve international standards by creating and retaining technological advantage. The ambitious project is going to be major influencer of geo political scenario of the world by establishing a global network of influence.

The Q&A session resulted in discussions on creation of more value chains and systems. Human resource of China was considered an important contributor to its thrust, as well as its GDP and technological advancement. Other aspects discussed during the session were role of Europe in BRI, risks related to the project, technology absorption and adaptation, geopolitical changes, foreign policy, internationalization of Chinese currency, and terms of technology transfer. The environmental aspects of BRI were also touched upon. CPEC, it was observed, has become a major framework for economic policies environment for future years.

Roundtable Dialogue on Sino-Pak Agriculture Cooperation – Way Forward (January 20, 2020)

A roundtable dialogue on “Sino-Pak Agriculture Cooperation – Way Forward” was held at COMSATS Secretariat, on 20th January 2020. Jointly organized by COMSATS and the Institute of Peace



and Diplomatic Studies (IPDS), the forum highlighted the ongoing Sino-Pak Agriculture Cooperation during the second phase of China Pakistan Economic Corridor (CPEC). The dialogue was attended by research scholars, various stakeholders from enterprises, academicians, diplomats, and members of the civil society.

In his keynote address, Dr. Gu Wenliang, Agricultural Commissioner at the Embassy of People's Republic of China in Islamabad, underscored the need to promote cooperation in agriculture sector to help produce better crop varieties and agricultural products, and building green corridor.

Dr. Gu highlighted the prospects of collaboration between the Chinese Academy of Sciences (CAS) and Pakistan Agriculture Research Council (PARC) for policy formulation.

Mr. Hassan Daud, CEO of the Board of Investment from KPK and former Project Director, CPEC in Planning Commission, Government of Pakistan, emphasized the need for promoting co-branding and co-marketing of agro-based products and livestock. Speaking on the occasion, Dr. Muhammad Azeem, Chairman, PARC, deliberated on Pakistan's standing in agriculture and outlined the potential avenues of cooperation between Pakistan and China.

Mr. Waqas Burki, Capability Manager at Fatima Group, spoke about the global rankings of Pakistan in crop production. He opined that crop production mechanisms should be uplifted through digitalization and efficient use of technology.

Session on University Ranking & Quality Assurance (February 18, 2020)

An informational session on the ranking and quality assurance of universities was jointly organized by COMSATS' International Centre for Training & Development (ICTD), the Inter University Consortium for the Promotion of Social Sciences Arts and Humanities (IUCPSS) and the Applied Higher Education Singapore, at COMSATS Secretariat, on 18th February 2020.

The session was jointly chaired by Ms. Mandy Mok, Chief Executive Officer and faculty member at Applied HE Singapore; Prof. Herman Surjono, Dean Faculty of Engineering, Universitas Negeri Yogyakarta, Indonesia; Mr. Pieter E. Steck, Chief Analyst at Applied HE Singapore; Dr. Rauf I Azam, Pro-Rector of University of Lahore; and Dr. Syed Tahir Hijazi, Vice Chancellor of MY University, Islamabad.

Speaking on the occasion, Ms. Mok informed that the Applied HE carries out ranking of member educational institutes as well as rating for the international

employers of students who are ready for the job market. She added that this ranking is being endorsed by the international bodies like the International Labor Organization (ILO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

Thirty participants from various institutions of Pakistan attended the session that included: the Women University, Multan; Shaheed Benazir Bhutto Women University, Peshawar; Quaid-e-Azam University, Islamabad; GC University, Lahore; The University of Lahore, Lahore; National University of Medical Sciences (NUMS), Rawalpindi; Preston University; Quality Enhancement Cell (QEC), FAST-National University of Computer and Emerging Sciences (NUCES), Islamabad; and Quality Enhancement Cell (QEC), Abbottabad University of Science & Technology, Abbottabad.

Startup Founder Workshop on How to Build Successful Team and Businesses (March 03, 2020)

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





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

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

Ms. Simpson also stressed upon the need to promote entrepreneurial culture and stated that STEM education is important for enabling the culture of innovation, inculcating analytical thinking and increasing science literacy.

Awareness Talk on Coronavirus Preparedness in the Workplace (March 09, 2020)

An awareness talk on “Corona virus preparedness in the workplace” was

organized at COMSATS Secretariat for the employees, on 9th March 2020. The talk delivered by Dr. Zavar Ali, Vaccinologist and Travel Health Physician at Excel Labs, Pakistan, covered various aspects of the epidemic, including disease prevention and control.

During the talk, Dr. Ali shared some key statistics of disease spread in China and elsewhere in the world and touched upon aspects related to epidemiology, etiology and pathogenesis, especially in the context of Coronavirus disease (COVID-19).

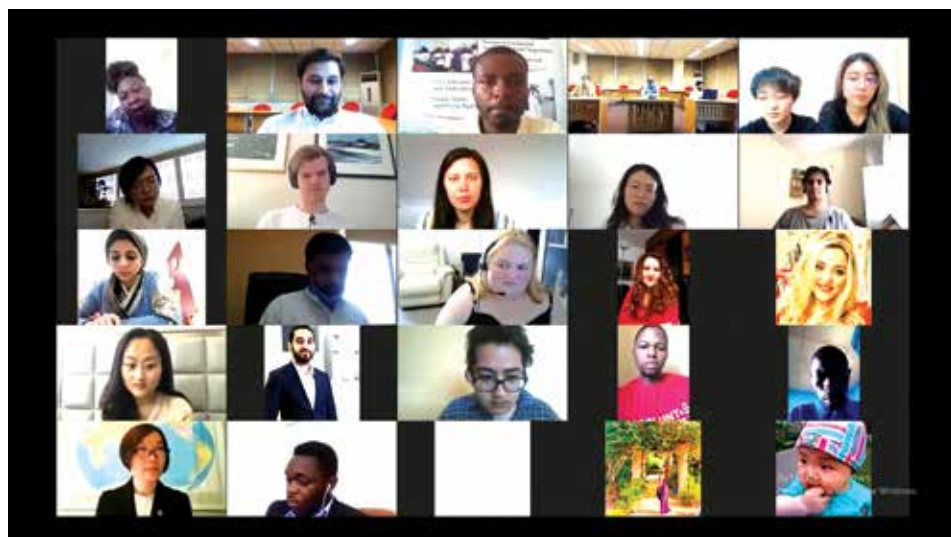
The talk was followed by Q&A session wherein Dr. Ali answered various queries related to diagnosis, routes of transmission

as well as public health response to COVID-19.

Webinar on Role and Challenges of Youth in Global Crisis – COVID-19 (May 04, 2020)

An international webinar to commemorate National Youth Day of China was organized by COMSATS on 4th May 2020. The webinar, titled “Role and Challenges of Youth in Global Crisis – COVID-19”, was aimed at realizing the transformative role being played by youth in numerous settings and spheres for effective translation of various targets of United Nations Sustainable Development Goals (SDGs); as well as suggesting ways to apply youth’s potential to help deal not only with the current coronavirus pandemic but also with looming global threats and key challenges to sustainable development, such as climate change.

The webinar was moderated by Ms. Nafula Wafula, Co-founder of Tunawiri (The Grassroots Gender Justice Network) and Vice Chairperson in Charge of Policy and Advocacy at the Commonwealth Youth Council. The event featured remarks and views of the following international experts, young leaders and entrepreneurs from 15 countries, Greece; Pakistan; China; China; Jordan; Cameroon; Botswana; Ghana; Turkey; Egypt; United



Kingdom; Norway; China; Tanzania; and Switzerland.

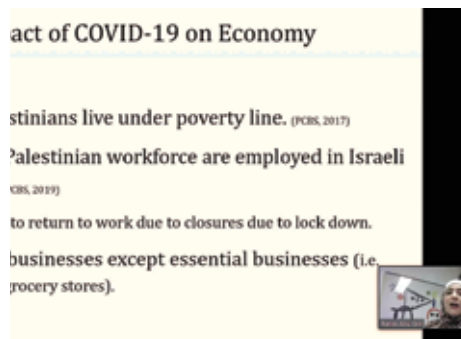
During the webinar, country responses to COVID-19 and youth's role in dealing with the crisis were recorded by different participants. China's remarkable success in containing the spread of COVID-19 as a nation was lauded and the significant role that Chinese youth played in increasing awareness about disease prevention and control was regarded exemplary.

It was opined that shift to digital tools and methods can help solve the rising youth unemployment challenges. In addition, youth's involvement was deemed an important element along with civic education, democracy and local development in societal building and progress. The participants also highlighted online education and learning during the pandemic as a challenge for countries with resource constraints.

Various ideas on solutions to cope with the ramifications of the corona pandemic were also presented during the webinar. Green economy was considered a sustainable instrument to handle social, environmental and economic fallouts of the pandemic. Online sharing of experiences, knowledge and best practices relating to mitigation strategies and coping mechanisms were valued as important elements for generating integrated response to corona pandemic.

Webinar on Climate Change Risks and Impacts on Vulnerable Communities Post COVID-19 (July 08, 2020)

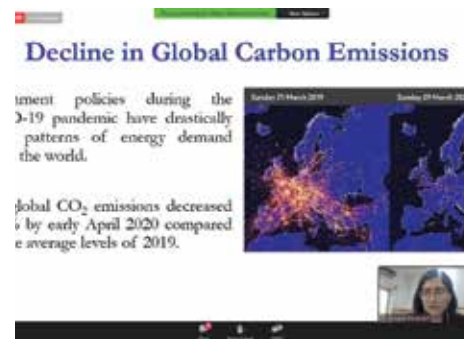
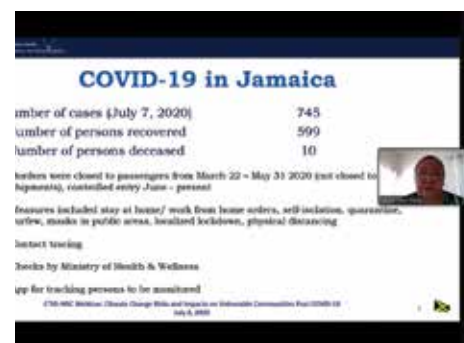
COMSATS Centre for Climate & Sustainability (CCCS) and Centre of Excellence for Research & Applied Sciences on Climate Change & Sustainable Development of National Research Centre (C3SD – NRC), Egypt, jointly organized a webinar on Climate Change Risks and Impacts on Vulnerable Communities Post COVID-19, on 8th July 2020. The webinar



was aimed at bringing stakeholders from Global South to share information, experience and knowledge on addressing challenges of COVID-19, environmental sustainability and food security.

Speakers from six scientific and research institutions, including four CCCS Network members in Jamaica, Palestine, Pakistan and Sri Lanka, participated in the webinar that was moderated by Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council and Director of C3SD – NRC, and Ambassador (R) Shahid A. Kamal, Founder and Head of CCCS.

The speakers at the webinar included: Dr. (Ms.) Ilmi G. N. Hewajulige, Additional Director General (R&D) at Industrial Technology Institute, Sri Lanka; Prof. Hesham A. El Enshasy, Director of Institute of Bio-products Development, University Technology Malaysia (UTM),



Malaysia; Prof. Rania Abu Seir, Professor of Medical Sciences at Al-Quds University (AQU), Palestine; Dr. Anjum Rasheed, Assistant Professor at Centre for Climate Research & Development (CCRD), COMSATS University Islamabad (CUI), Pakistan; Eng. Sherif Abdel Reheem, Head of Climate Change Central Department, Egypt; and Ms. Leslie Hoo Fang, Research Scientist at International Centre for Environment & Nuclear Sciences (ICENS), Jamaica.

Opening the webinar, Prof. Shaalan remarked that climate change is a long term pandemic that could have worst implications than it currently presents.

Co-chairing the webinar, Ambassador Kamal informed that COMSATS has set up CCCS network to work on the linkages of climate change and sustainable development and welcomed the initiative of C3SD-NRC to hold the webinar.

Key points of discussions included:

- Effect of COVID-19 on global action against climate change, green transition and recovery;
- Global carbon emissions and aviation

footprint stats (dropped 17 and 60 percent, respectively);

- Postponement of UNFCCC COP 26 to 2021 and SDGs review;
- Importance of environmental sustainability in the backdrop of COVID-19 pandemic, especially challenges due to global warming, air pollution, water contamination, toxic soil, and loss of biodiversity;
- Importance of ensuring food and nutrition security in the face of global warming, higher frequency of natural disasters;
- Government interventions for reducing GHG emissions, fighting COVID-19 pandemic and ensuring food security; and
- Clinical and epidemiological issues during the pandemic, challenges in fighting COVID-19 with limited healthcare capacity, and role of telemedicine.

Webinar on Impacts of Climate Change on South Asian Monsoon (July 28, 2020)

On 28th July 2020, COMSATS Centre for Climate and Sustainability (CCCS) organized a webinar on “Impacts of Climate Change on South Asian Monsoon”.

Experts and scientists from Bangladesh, Nepal, Pakistan, and Sri Lanka joined the webinar with their views on the variability of the monsoon and its relationship with the changing global climate system as well as the adverse impacts of climate-mediated changes on South Asian region at large.

The presentations made during the webinar highlighted the gravity of social, economic and environmental implications associated with the abrupt monsoon patterns in South Asia. The speakers discussed the repercussions of increasing monsoon variability for Nepal as well as disasters caused by extreme weather events; current trends and future projections about the shifting patterns



of monsoon in various parts of Pakistan; calamitous impact of summer monsoon in Sri Lanka marked by flooding and drought; impact of atmospheric aerosols, and non-renewable energy resources on precipitation patterns; and the mitigation strategies being taken by the government of Bangladesh to curb the fallout of climate change.

Some key recommendations of the webinar related to: need for research-backed policy formulation to help mitigate the negative impacts of suddenly changing patterns of monsoon on environmental and socioeconomic conditions of the South Asian region; enhanced regional cooperation to promote sharing of good practices and sustainable solutions to aid adaptation with variable trends of monsoon; and allocation of resources for strengthening the scientific and technical capacity.

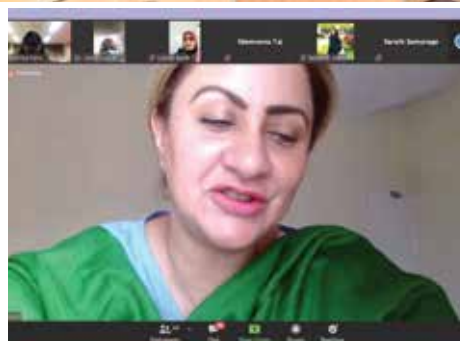
International Webinar on Digital Health in COVID-19: Sharing Experiences of COMSATS' South Asian Member States (September 07, 2020)

COMSATS, in collaboration with the Commonwealth Centre for Digital Health (CWCDH), organized an international webinar on ‘Digital Health in COVID-19: Sharing Experiences of COMSATS’ South

Asian Member States’, on 7th September 2020. The main purpose of the event was to gather relevant stakeholders from COMSATS’ South Asian Member States for sharing experiences in response to the COVID-19 pandemic, in particular, COVID-19 related digital health solutions at government and institution levels. The webinar was virtually attended by a significant number of relevant individuals from Pakistan and abroad.

In her keynote address, Dr. Sania Nishtar, SAPM on Poverty Alleviation and Social Protection and Federal Minister, Government of Pakistan, thanked COMSATS for organizing the present webinar and appreciated COMSATS’ role as a leader in the use of digital technologies. Dr. Nishtar noted that COVID-19 has helped established digital technologies as a strong pillar of healthcare systems.

While sharing Pakistan’s experience in COVID-19 response, Dr. Nishtar especially highlighted the role of Government’s ‘Ehsaas’ Programme that helped manage the situation from pandemic response as well as poverty alleviation angles. She informed that the Programme aided Pakistan’s response to the emergency needs of one-third of the country’s population that was affected by the necessary lockdown. She informed that Pakistan’s experience of dealing with the pandemic is



also being shared with missions in Geneva and New York.

Dr. Vajira Dissanayake, Chairperson, CWCDH, considered the role of innovation and advocacy of crucial importance in dealing with the pandemic. Dr. Dissanayake expressed willingness to work with all partners in finding regional solutions to the pandemic. Dr. Selim Reza, Deputy Secretary at the Ministry of Science and Technology, Bangladesh, shared some key interventions made and challenges faced by Bangladesh during the pandemic. He hoped that this platform will help share important knowledge for the benefit of other developing countries.

In his remarks on the occasion, Prof. Dr. Md. Aftab Ali Shaikh, Chairman of Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh, paid homage to his government for the role it played during the pandemic and highlighted the importance of S&T backed

solutions and responses to COVID.

Dr. Anil Jasinghe, Secretary, Ministry of Environment and Former Director General, Health Services, Sri Lanka, informed that the country was successful in controlling the drastic impact of the pandemic in a rapid manner which he attributed to good strategy and stringent measures taken by country's government. H.E. Vice Admiral (Rtd.) Mohan Wijewickrama, High Commissioner of Sri Lanka to Pakistan, shared some of the measures taken by the country including establishment of Corona task force mandated to deal with the exigency. Recalling the variety and levels of responses to COVID-19 throughout the globe, he appreciated Pakistan's strategy and success in dealing with the pandemic in the last few months.

The technical proceedings of the event were chaired by Dr. Ghazna Khalid, Member of Prime Minister's Task Force

on COVID-19, Government of Pakistan. Speaking on the occasion, she deemed CDWH a lynchpin, in establishing and strengthening such collaborations, while also encouraging 27 member states of COMSATS to create a pandemic solidarity drive.

During the event, digital health experts and practitioners from Bangladesh, Sri Lanka, and Pakistan, delineated on measures, policies and best practices that were utilized to cope with the pandemic in their countries.

Discussions during the event touched upon issues relating to cooperation in policy and strategy sharing at governments and institution levels; data collection and analytics; joint publications based on indigenous researches and success stories; training of doctors and young practitioners for better pandemic response; application of digital technologies for pandemic as well as for non-emergency response, building



better infrastructure in remote areas that are affected the most in both situations.

Webinar on Challenges to Agriculture and their Solutions in the Global South (September 09, 2020)

COMSATS Centre for Climate and Sustainability (CCCS) hosted a webinar on “Challenges to Agriculture and their Solutions in the Global South”, on 9th September 2020. The event was aimed at discussing climate change triggered challenges to agriculture and food security in the developing world within the framework of Sustainable Development Goal 2 (SDG2). Speakers from the regions of Africa, Asia and Latin America participated in the webinar that established the importance of sharing knowledge, good practices and success stories among experts from the Global South to address challenges in achieving food security within the framework of South-South Cooperation.

Opening the webinar, Ambassador Shahid Kamal, Head of CCCS, stated that agriculture is the backbone of economy especially in the Global South due to region’s heavy reliance on farming as the primary source of income. The changing climate is, therefore, a great threat to regional food security and robust efforts

are needed to achieve zero hunger.

The technical proceedings of the webinar were moderated by Dr. Ghulam Haider, Assistant Professor at National University of Science and Technology (NUST), Islamabad, and conclusions were presented by Dr. Saeed Asad, Assistant Professor at Centre for Climate Research

& Development (CCRD) at COMSATS University Islamabad (CUI). Presentations were made by the following speakers: Dr. Eduardo Posada, Director of Centro Internacional de Fisica (CIF), Colombia; Dr. Mamma Sawaneh, Professor at School of Agriculture and Environmental Science at the University of The Gambia (UTG), The Gambia; Dr. Edward Yeobah, Deputy Director at Council for Scientific and Industrial Research (CSIR), Soil Research Institute of Ghana; Dr. Masnat Al Hiary, Director of Socio-Economic Research Directorate at National Agricultural Research Council of Jordan; and Dr. Ranjith Premalal De Silva, Professor of Agricultural Engineering and Former Vice Chancellor of Uva Wellassa University, Sri Lanka.

Recommendations made during the webinar pertained to: alternate crops for mitigating the adversaries of climate change; establishment of financial institutions, including microfinance banks for smallholder farmers to access credit;





encourage private sector participation in agriculture via public – private partnerships; and need for revisiting the agriculture policies aimed at improving agricultural production.

Webinar on Sustainable Water Governance in the Global South under Changing Climate (October 08, 2020)

COMSATS Centre for Climate and Sustainability (CCCS) in collaboration with COMSATS' Centre of Excellence in Jordan, the Royal Scientific Society (RSS), organized a webinar on "Sustainable Water Governance in the Global South under Changing Climate". Held on 8th October 2020, the webinar had the overarching theme of Sustainable Development Goal 6 (SDG6) – Clean Water and Sanitation.

Following speakers from Asia, Africa and Middle East joined the webinar with their views and expertise: Dr. Emmanuel O. Bekoe, Senior Research Scientist, Council for Scientific and Industrial Research (CSIR), Ghana; Dr. Maha Al-Zu'bi, Researcher – Agriculture Water Solutions, International Water Management Institute (IMWI), Jordan; Dr. Jauad El Kharraz, Head of Research, Middle East Desalination Research Centre (MEDRC), Oman; Dr. Toqeer Ahmed, Assistant

Professor, Centre for Climate Research and Development (CCRD), COMSATS University Islamabad (CUI), Pakistan; and Dr. Mehmet Dilaver, Research Officer, TUBITAK Marmara Research Center (MRC), Turkey.

The event was moderated by Dr. Almoayyed Assayed, Manager Climate Change Studies at RSS, Jordan. During the webinar, speakers highlighted challenges to sustainable water governance in their respective countries. Some highlights of key deliberations of the event are as follows:

- Social parameters of water governance were discussed that have an impact on water quality, safety as well as demand and supply.
- The role of research and development for water governance backed by evidence-based policy and legislation was considered important for water-related governance.
- Good governance, a multi-stakeholder/multi-institutional, calls for planning, policy and legislation, and effective engagement at local, national and international levels.
- In view of agriculture's dependence on water, sustainable measures need to be adopted to achieve both water and food security.

Training Workshop on Becoming Internationally Recognized SIYB Trainer (October 26 - November 05, 2020)

COMSATS, in collaboration with Start and Improve Your Business (SIYB) of International Labour Organization (ILO) and IIU Business Incubation Center (IIU-BIC), Pakistan, organized an eleven-day long training workshop on "Becoming Internationally Recognized SIYB Trainer". SIYB is a management-training programme of ILO.

Held from 26th October to 5th November 2020, this SIYB Training of Trainers (ToT) workshop trained 12 individuals belonging to various institutions and sectors. The training was conducted by Lead Master Trainers from Pakistan, Sri Lanka and Uganda – Engr. Muhammad Ahsen Mirza, Mr. Gemunu Wijesena, and Mr. David Katenderi, respectively.

The workshop was inaugurated on 26th October 2020, by Senator Sitara Ayaz, Chairperson Senate Standing Committee on Climate Change, Pakistan, and Executive Director COMSATS, Dr. S. M. Junaid Zaidi, as Chief Guests of the ceremony. Ms. Ingrid Christensen, ILO Country Director for Pakistan; Mr. Saad Gilani, Program Officer ILO Pakistan;

and Mr. Gemunu Wijesena, SIYB Master Trainer Developer from Sri Lanka also joined the session virtually.

The technical sessions of the event started with a brainstorming session steered by Mr. Wijesena that also provided an introduction to the modules and contents of the workshop. The first week of the workshop imparted training on essential tools to become a successful trainer of entrepreneurs, as well as opportunities and impacts of SIYB. During the second week, the participants developed a session plan based on their learning and conducted the practice session that was followed by post-session feedback from the Master Trainers and other members of the training.

Webinar on Challenges of Rapid Urbanization in the Global South (October 29, 2020)

To mark United Nations World Cities Day 2020, COMSATS Centre for Climate and Sustainability (CCCS) organized a webinar on “Challenges of Rapid Urbanization in the Global South”, on 29th October 2020. The webinar was co-organized by COMSATS Centre for Climate & Sustainability (CCCS) and COMSATS’ Centre of Excellence, Tanzania Industrial Research and Development Organization (TIRDO).

Moderated by Dr. Lugano Wilson, Director of Engineering Development, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania, the webinar included speakers from China, Iran, Kazakhstan, Sudan; and Tanzania.

The talks and discussions of the event touched upon a number of important issues related to urbanization that included: land-use planning, controlling emissions caused by transport and industrial sector, reduction in arable land, over-population, and waste management. Adopting waste-to-energy approach was deemed crucial as a sustainable option to address waste and energy related problems.



Webinar on “Breast Cancer Awareness: Give Hope, Save Lives” (October 29, 2020)

With October celebrated as the Breast Cancer Awareness Month worldwide to help generate necessary support and awareness about the disease, COMSATS Secretariat highlighted the impact of this issue of great concern to a big population of the world by holding a webinar entitled “Breast Cancer Awareness: Give Hope, Save Lives”.

Held on 29th October 2020, the event was opened by Ambassador (R) Fauzia Nasreen, Advisor (SDGs) at COMSATS, who highlighted the need for early diagnosis, access to proper medical facilities, affordable and timely care as the cornerstones of breast cancer control. She emphasized on having effective measures for overcoming lack of knowledge, appropriate facilities, family support and fear related to cancer in our society.

In her keynote address, Dr. Farheen Raza, Chief Registrar Radiology Department at Pakistan Institute of Medical Sciences (PIMS) Islamabad, emphasized the importance of regular screening and the need to have community-based health education component in treatment of the disease. She proposed a one-stop breast cancer clinic with the aim to answer financial, cultural, mental and physical

needs of women as one of the ways forward towards reducing breast cancer cases.

Dr. Samina Naeem, ex-Associate Professor of Health Services Academy, and Consultant at WHO Pakistan, gave a comprehensive overview of the disease.

Dr. Azeema Fareed, Principal Medical Officer, COMSATS Secretariat and Coordinator of the session opined that breast cancer awareness is not only needed among women but everyone from family and society who are a part of the recovery journey. As a member of the pioneer team of telehealth in Pakistan, she also hoped to initiate tele-medicine training for medical practitioners in remote areas for helping to address the issue nationwide.

While sharing her story during the webinar, a breast cancer survivor, Dr. Fauzia Cheema, drew attention to the lack of psychological, emotional and social support for cancer patients and urged having cancer support groups to help such patients deal with the mental and physical trauma attached with such serious ailments.

Webinar on Energy Efficiency and Cleaner Production Practices in Industry (November 25, 2020)

COMSATS Centre for Climate and

Sustainability (CCCS) in collaboration with the Environment and Cleaner Production Institute (ECPI) of the Scientific and Technological Research Council of Turkey (TUBITAK), Turkey, organized a webinar on Energy Efficiency and Cleaner Production Practices in Industry. Held on 25th November 2020, the webinar had the overarching theme of Sustainable Development Goal 7 (SDG7) – Affordable and Clean Energy.

Following speakers from Asia, Africa and Middle East joined the webinar with their views and expertise: Prof. Zhiguang Zhu, Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences (CAS), China; Ms. Jehan Haddad, Royal Scientific Society (RSS), Jordan; Dr. Farrukh Raza Amin, Centre for Climate Research and Development (CCRD), COMSATS University Islamabad (CUI), Pakistan; Dr. Lugano Wilson, Tanzania Industrial Research & Development Organization (TIRDO), Tanzania; and Dr. Emrah SIK, TUBITAK, Turkey. The event was moderated by Dr. Ozgur Dogan, Senior Researcher at ECPI, TUBITAK, Turkey.

During the technical proceedings of the webinar, Ms. Jehan from RSS shared ongoing projects of Resource Efficiency and Cleaner Production (RECP) Programme which is being run by RSS in partnership with UNIDO and funded by European Union. The Programme

is supporting environmental-friendly technologies and cleaner production practices in Jordan. Dr. Emrah from TUBITAK shared some ongoing cleaner production projects of ECPI.

Prof. Zhiguang from TIB shared his expertise on biofuels and biocatalysis, and considered artificial electron transfer technique valuable for synthesis of biofuels for industries and transport sector usage. He remarked that bioenergy is clean, safe and efficient energy resource. He considered cellulosic alcohols sustainable and cleaner source of biochemical fuels.

Dr. Farrukh Raza from CCRD delineated synthesis of methane from rice straw by anaerobic digestion technique. He shared his apprehensions about the toll that quickly depleting non-renewable resources would take on world's energy needs during the next couple of decades.

2nd African Symposium on Big Data Analytics and Machine Intelligence & 6th TYAN International Thematic Workshop “Data Science for Solution driven and Sustainable Response to Current Developing World Challenges” (December 03 – 04, 2020)

COMSATS partnered with the World

Academy of Sciences (TWAS) Young Affiliates Network (TYAN), TWAS Sub-Saharan Africa Regional Partner (TWAS SAREP), TWAS Latin America and the Caribbean Regional Partner (TWAS LACREP), TWAS Arab Regional Partner (TWAS-AREP), and Association for Computing Machinery – Women Europe (ACM-W) to organize the 2nd African Symposium on Big Data Analytics and Machine Intelligence and the 6th TYAN International Thematic Workshop “Data Science for Solution driven and Sustainable Response to current developing world challenges”. The two events were virtually held on 3rd and 4th December 2020, and had the participation, inter alia, of over 50 researchers, scientists, faculty members and data scientists.

Dr. Bolanle Ojokoh, Executive Board Member of the TWAS Young Affiliates Network (TYAN) & Associate Professor, Department of Information Systems, Federal University of Technology, Akure (FUTA), Nigeria, inaugurated the event. Through various topics covered during the two-day event, the participants learned about the latest advancements in the field of data science and artificial intelligence.

The event provided a networking opportunity to the participants to collaboratively work out effective Internet/information security solutions for the masses; as well as integrate data science in development process.



PARTICIPATION IN IMPORTANT FORA AND MEETINGS

- Webinar on “Regional, Sub-regional and Interregional Organizations in the Global South as Actors in Responding to COVID-19” (15th July 2020) 42
- 3rd Asia-Pacific Forum on South-South and Triangular Cooperation (25th November 2020) 43
- 2020 UN Regional SSC and TrC Focal Points Network Retreat (15th December 2020) 43

PARTICIPATION IN IMPORTANT FORA AND MEETINGS

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



Webinar on “Regional, Sub-regional and Interregional Organizations in the Global South as Actors in Responding to COVID-19” (15th July 2020)

A key player in South-South and Triangular Cooperation in the region, COMSATS participated in the 3rd Asia-Pacific Forum on South-South and Triangular Cooperation held under the theme “The Role of South-South Cooperation in Building Back Better from COVID-19 Pandemic in the Asia and the Pacific”, on 25th November 2020. The forum was jointly organized by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP); the United Nations Office for South-South Cooperation (UNOSSC); the Government of Indonesia; and the Thailand International Cooperation Agency (TICA), Ministry of Foreign Affairs of Thailand.

Amb. (R) Fauzia Nasreen, Advisor (SDGs) at COMSATS Secretariat, gave a talk at

the Forum that highlighted good practices and policies of Asian Pacific States as well as regional and sub-regional responses to help build back better from COVID-19 through South-South cooperation. The event attracted participation of heads of the development cooperation, South-South cooperation agencies within the governments of countries in Asia and the Pacific.

Speaking during the session on “Regional and sub-regional responses promoting

South-South cooperation in addressing COVID-19 in Asia-Pacific”, Amb. Fauzia shared COMSATS’ key activities that helped share information, knowledge and experience as well as built relevant synergies among COMSATS’ Member States to aid individual countries’ responses to COVID-19.

As part of COMSATS’ initiatives during COVID-19 period so far, Amb. Fauzia informed that COMSATS Telehealth scaled-up its activities and provided





training to telehealth professionals providing maternal health services to the vast rural community throughout Pakistan.

She also highlighted some R&D developments of COMSATS Centres of Excellence, including: development of robots for assisting paramedics by Centre (ITS) in Indonesia; formulation of antibody cocktail against coronavirus by Centre (TIB) in China; development of a unique dual gene LAMP test for the detection of COVID-19 infection by Centre (CUI) in Pakistan; development of a potential herbal remedy by Centre (TIRDO) in Tanzania; and designing of vaccine against coronavirus by Centres in Egypt (NRC) and (TUBITAK) Turkey.

Identifying the gaps in promoting South-South cooperation in Asia-Pacific for post COVID-19 recovery, Amb. Fauzia opined that at the sub-regional level challenges exist in leveraging support of international organizations by inter-governmental organizations. She further stated that international organizations such as UNESCAP can help facilitate interactions among relevant stakeholders at the sub-regional level to generate ideas for effective response and recovery. Some recommendations made by Ms. Nasreen included:

- To strengthen health emergency

systems and cooperation on social protection at sub-regional levels;

- To enhance South-South cooperation by strengthening mechanisms with involvement of state and non-state actors;
- To support inter-governmental agreements to ensure ICT connectivity; and
- To share information on public health measures to help build resilience against future pandemics.

3rd Asia-Pacific Forum on South-South and Triangular Cooperation (25th November 2020)

As a regional player advocating South-South and Triangular Cooperation, COMSATS was invited to participate in United Nations Office for South-South Cooperation (UNOSSC)'s event on 2020 UN Regional South-South and Triangular Cooperation Focal Points Network Retreat, held on 15th December 2020.

Amb. (R) Fauzia Nasreen, Advisor (SDGs) at COMSATS Secretariat, shared COMSATS' stance during the session on "Digitalization as a cross-cutting issue in United Nations programmes and the role for South-South and Triangular Cooperation" of the event. Speaking on

the occasion, she considered creation of digital societies imperative especially in the current times of COVID-19 pandemic. She suggested creating multistakeholder forums, strengthening digital literacy, and empowering youth and women through building capacity to help bridge North-South digital divide and address issues and problems of developing countries.

Sharing COMSATS' on-going and future initiatives for leveraging digital technologies for the betterment of the South, Amb. Fauzia stated that such initiatives based on creative approaches have promoted capacity-building, helped share knowledge, experience and good practices, as well as technological and scientific resources.

2020 UN Regional SSC and TrC Focal Points Network Retreat (15th December 2020)

Dr. Azeema Fareed, Principal Medical Officer at COMSATS Secretariat, participated as a panelist in the United Nations Office for South-South Cooperation (UNOSSC), and UNDP Seoul Policy Centre (USPC) joint webinar on "Regional, Sub-regional and Interregional Organizations in the Global South as Actors in Responding to COVID-19", held on 15th July 2020.

The webinar was held with a view to encourage global and regional exchange of experiences to help increase understanding of the challenges and solutions, improve the effectiveness of cross-disciplinary responses, and leverage cooperation amongst countries, including through South-South and Triangular cooperation.

Other panelists of the event included: Mr. Fadi Abdullah Farasin, Assistant Director General at Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRI), Turkey; Mr. Habib-Ur-Rehman Mayar, Deputy General Secretary, G7+ Secretariat and Executive Director of G7+ Foundation, USA; Ms.

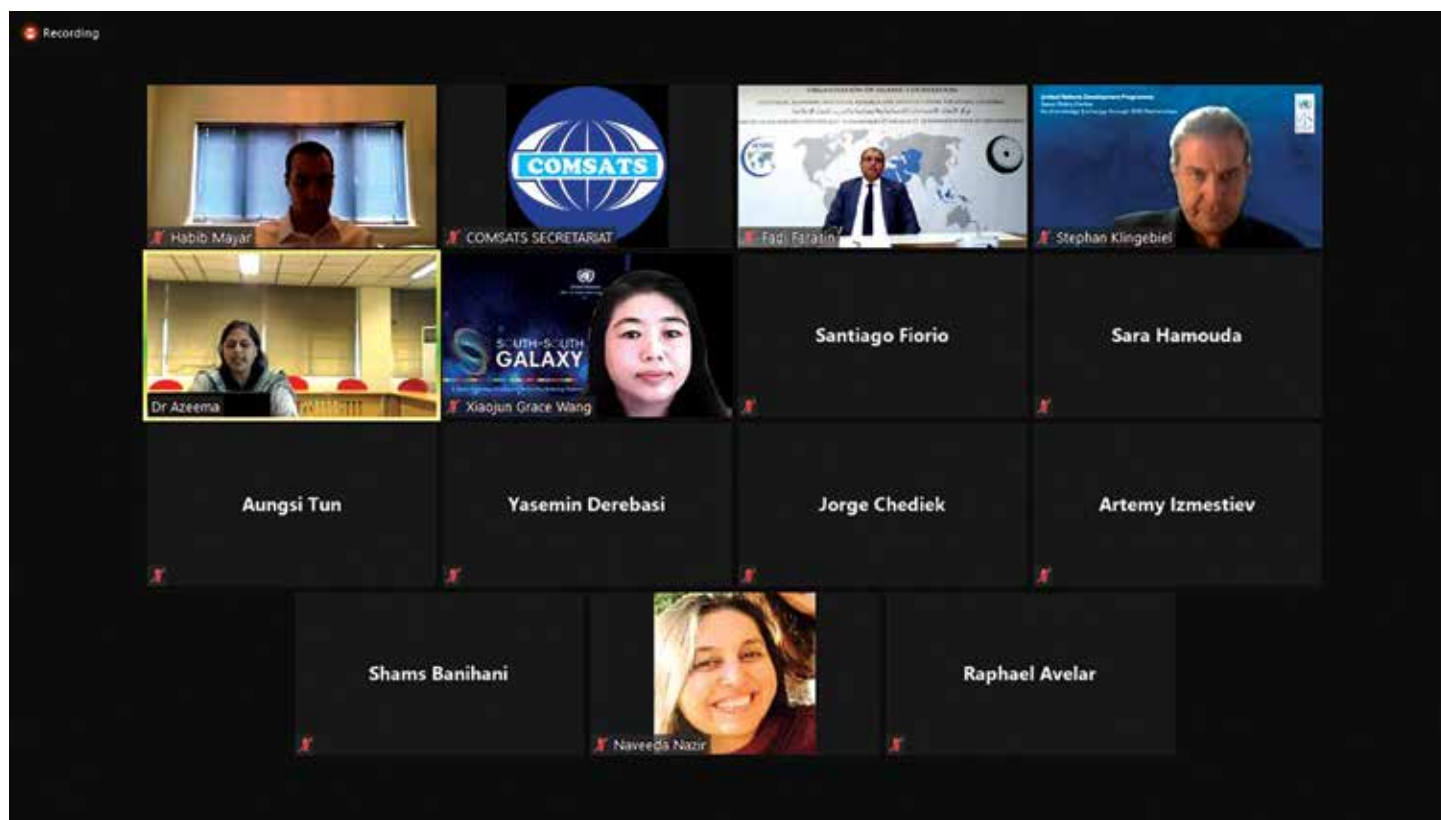
Sara Hamouda, SDGs and Agenda 2063 Expert, African Peer Review Mechanism, African Union; and Prof. Santiago Fiorio Vaesken, Human Rights and International Humanitarian Law Officer from Ministry of Foreign Affairs of Paraguay.

In her talk, Dr. Fareed gave an overview of COMSATS' international programmes, and activities in the Southern region while also highlighting the major breakthroughs in R&D made by COMSATS' Network during the past few months in its fight against the corona pandemic. She highlighted COMSATS' response to

COVID-19 which is primarily centered upon enhancing collaborations among scientific communities within COMSATS Member States to promote sharing of experiences and good practices for joint action towards the pandemic. Dr. Fareed stated that during the pandemic, COMSATS has continued its capacity building activities and noted recent webinars and trainings organized in the areas of telehealth, food security, climate change and sustainable development, and youth's role in COVID-19 response.

She also mentioned COMSATS'

undertakings in the field of telemedicine, including extension of support to its partners in the South and Network members for institution of telemedicine setup, and capacity building of telehealth professionals. Besides, it was also informed that COMSATS is collaborating with the Government of Pakistan for conceiving possible digital health solutions for the country as well as is providing patronage to Yaran-e-Watan initiative for linking Pakistani health diaspora across the globe with healthcare organizations within Pakistan.



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ACTIVITIES OF COMSATS CENTRES OF EXCELLENCE

A group of twenty-four 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' mandate of having programmes of scientific research and development. This section covers reports received from COMSATS' Centres of Excellence, as well as news of some Centres covered in COMSATS Newsletter over the year.



Al-Farabi Kazakh National University (KazNU), Kazakhstan

Al-Farabi Kazakh National University (KazNU) is one of the oldest world's leading universities. Placed at 165th position by the International QS World University Rankings (QS WUR) in the world, the university has made enormous contributions towards the advancement of science and technology in Kazakhstan.



COVID-19 Related Developments

Development of New Immunostimulators for Protection Against Coronavirus

A project of KazNU won "Stop Coronavirus" Contest held by Science Fund JSC, Kazakhstan, to find effective

solutions for addressing COVID-19 pandemic. The project aims to develop a technology from *Spirulina platensis* cyanobacteria biomass and its various combinations with useful plants for synthesizing new immunostimulators having antibacterial, antiviral, probiotic and antioxidant properties. Plant preparation consisting of a potent antiretroviral, low-toxicity mixture of medicinal and edible plants will be synthesized under this project.

Partnerships with ICESCO-Morocco for COVID-19 Response

KazNU won a grant from the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco, for implementing a project to combat coronavirus. ICESCO had opened this international call for scientific and technological projects in order to find innovative solutions for combating corona pandemic. KazNU's project was recognized as one of the best. The project is aimed at

production of universal new generation antiseptics and disinfectants. The process will use raw materials indigenously developed by KazNU scientists.

Development of Research Infrastructure

Biomedical Research Center

KazNU opened a biomedicine research center with a view to conduct research on infectious diseases and cancer; natural drugs and biologically active substances against diseases; and comprehensive study of the human immune system. In addition, the Centre is to train young scientists from leading universities to master the methods used in the field of biomedicine, robotics, bioinformatics, and operation of preventive medical equipment. Currently, the Biomedical Research Center is also studying the role of immunoregulatory cells in tumors and chronic inflammation as well as the effects of medicinal plant extracts on animals.



Meetings

H.E. Willy Kempel, Ambassador of Austria to Kazakhstan

Prospects of cooperation in the fields of science, education, and innovation development were discussed. Mr. Kempel looked forward to having close collaboration between KazNU and universities in Austria for initiating joint projects on Sustainable Development Goals.

H.E. Didier Canesse, Ambassador Extraordinary and Plenipotentiary of the French Republic to Kazakhstan

Consensus was reached on the establishment of Kazakh-French Research School of Mathematics. The main purpose of the School will be to train highly qualified personnel and increasing the competitiveness of graduates to help improve their employment prospects in leading companies worldwide. Prof. Mohammed Maher Kabakibi, President, University of Damascus, Syria: Possibility of opening a branch of Al-Farabi KazNU in Damascus, Syria, was explored.

Awards and Honors

- In recognition of his scientific contributions and leadership qualities, Prof. Dr. G. M. Mutanov, Rector of

Al-Farabi Kazakh National University (KazNU), Kazakhstan, was honored with the “Amity Global Academic Excellence Award”, in Noida, India. He was also honored by the Republic of Turkey with its highest state award, the Virtue Award, for his contribution to development of relations between Turkey and Kazakhstan in S&T.

- KazNU is being recognized as the Leader in the Web of Science Core Collection in the “Physics” subject field over the last three years at “Science Leader - Web of Science Awards 2020”.
- Prof. Alibek Issakhov, Head of the Department of Mathematical and Computer Modeling at KazNU was recognized as the “Highly cited Kazakhstani author” at “Science

Leader - Web of Science Awards 2020”.

- Prof. Bulat Kenessov, Director of KazNU’s Center of Physicochemical Methods of Research and Analysis, was conferred award for the “contribution to the development of scientometrics and evaluation of scientific activity in Kazakhstan”.
- Prof. Dr. Habibulla Kussainovich Ospanov, Head of Department of Physical Chemistry and Electrochemistry; and Prof. Dr. Vladimir Jumakadyrovich Junushaliyev, Doctor of Physical and Mathematical Sciences, were recognized as distinguished academicians of the National Academy of Science of Kazakhstan.

International Rankings

- KazNU secured 165th place in QS World University Rankings by moving up 42 positions from the last year.
- Academic Ranking of World Universities-European Standard (ARES) commended KazNU with an AA+ level, joining the ranks of leading European universities. The rating ranks universities on indicators, such as scientific and innovative activity, quality of teaching, level of digitalization, demand for graduates, international recognition, and academic mobility of students and teachers. The positions of a university



in international rankings and in the academic community are also taken into account.

Al-Quds University (AQU), Palestine

Founded in 1984, the Al-Quds University (AQU) is serving to provide excellence in academics and research. With its main campus in Abu Dis, AQU is the first Palestinian university to establish a medical school and nanotechnology research center.



COVID-19 Related Developments

Al-Quds University (AQU), Palestine, developed a fully computerized ventilator from locally available materials amid shortage of standard commercial ventilators and other respiratory support machines and their building blocks in Palestine. The prototype was designed by a team of senior professors from medicine and engineering faculties of AQU and successfully passed a series of rigorous preliminary medical, safety, and technical tests. The Palestinian Standards Institution (PSI) and the Ministry of Health (MOH) has officially approved the ventilator.



Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh

Bangladesh Council of Scientific and Industrial Research (BCSIR) is a non-profit multidisciplinary public-sector research organization. The main task of BCSIR is to foster R&D sector of the country.



COVID-19 Related Developments

BCSIR, Bangladesh, became one of the Bangladeshi research institutions to completely sequence the genome of SARS-CoV-2. This research development was aimed at facilitating global efforts to develop a vaccine against the virus.

COMSATS University Islamabad (CUI), Pakistan

COMSATS University Islamabad is a public sector university established in year 1998. The University has grown exponentially with seven physical campuses and a virtual campus. It has a student-body of over 35,068 students, teaching faculty of 2,700+ (including 1,120 Ph.D.), and is offering more than 100 programmes in 22 academic departments at undergraduate and postgraduate level.



TIMES Higher Education (THE) World Universities Rankings 2020 has placed CUI among 601-800 world best universities and 2nd in Pakistan. Besides, it was also ranked at #251-300 in THE Engineering & Technology, #301-400 in Computer Science and Business and Economics, #401-500 in Physical Sciences and #501-600 in Life Science subject rankings 2020.

CUI was also placed at 149th in THE Asian University Rankings 2020, 159th in THE Emerging Economies University Rankings 2020 and among 151-200 top young universities of world in 2020.

CUI-Some Statistics-2020	
Students	35,068
Graduates	70,000+
Faculty	2700+ including 1120 PhDs
Staff	2500+
Departments	22
Laboratories	280

In addition, CUI was ranked among 801-1000 world best universities as per QS World Universities Rankings for the year 2021. QS Asian Universities Rankings 2020 placed it at number 151.

R&D Activities

Rapid Test for COVID-19

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

Diagnostic Tool for Brain Tumor Detection

With a view to building the necessary infrastructure and technical human resource in AI, a National Center of Artificial Intelligence (NCAI) consisting of six universities, including COMSATS University Islamabad (CUI), Pakistan, was launched by the Government of Pakistan. CUI would host the Medical Imaging and Diagnostics (MID) laboratory and is working on identification of different diseases through different medical imaging

modalities, such as MRI, CT-Scan, and X-rays. Recently, a team from the MID Lab participated in the prestigious MICCAI BraTS challenge 2020 hosted by the Perelman School of Medicine at University of Pennsylvania, USA. Teams from all around the world participated in the challenge and submitted their algorithms for brain tumor segmentation, overall survival prediction, and uncertainty. The team from MID Lab at CUI, Pakistan, had their algorithm ranked at third-position. The lab is now aiming to develop a prototype for commercial purpose. This would help reduce the cost of diagnosis by almost a quarter and can also reduce the lead time thus contributing to early diagnosis and saving lives.

Research Output

In year 2020, three hundred (300) research projects, two fifty-six (256) travel grant applications and seventeen (17) seminar Workshops applications were submitted to different funding agencies out of which one hundred and twenty-four (124) research projects, one hundred and thirty-one (131) travel grants and seven (7) seminar/workshops have been funded by different funding agencies.

In order to attract young faculty into the research mainstream, a CUI Research Grant Program (CRGP) is in place to award grants up to Rs. 300,000/- for research proposals of 1-2 years' duration. In year 2018 under this program, sixty-two (62) research proposals were received. The same have been evaluated by the reviewers and considered by the authorized committee for decisions where forty-five (45) research proposals were approved and funded.

Patents

Patent on Microfluidics: The United States Patents and Trademark Office (USPTO) has allowed a patent on microfluidics device to COMSATS University, Islamabad. This US-patent is an outcome of the PhD research of Dr. Madeeha

Chaudry from Biosciences Department of CUI, Pakistan, that has led to development of a novel microfluidics device. The device is used for real time drug monitoring of patients undergoing therapeutic interventions using very minute amount of blood serum samples on the principle of microchip assay. The device will enable therapeutic drug monitoring in terminally-ill patients or those undergoing treatment from sensitive drugs which require real-time monitoring to prevent over-dose.

CUI has also developed in-house capacity to provide IP support to its researchers and file patent applications locally and internationally.

Patents	US	PK	Grand Total
Filed	5	1	6
Granted	6	2	8

Capacity-building Activities

CUI organizes on a regular basis workshops, seminars, and trainings of both national and international levels. These workshops are held in Islamabad and other campuses of CUI located at Abbottabad, Lahore, Wah, Attock, Sahiwal and Vehari. CUI's capacity building activities for students and faculties within the country and abroad have greatly benefitted them and, in turn, the university.

In year 2020, CUI-ORIC's planning

divisions conducted 06 trainings on various topics for over 118 professionals from a number of organizations, industries and universities.

CUI's Student Startup Business Center has organized twelve (12) training sessions for startups during the year 2018 through "SSBC-Business Plan Development Training Program" at Islamabad Campus in cooperation with expert faculty trainers of Management Sciences department. With purpose to enhance the capacity building of CUI students' startups (Batch-IV & V) on development of Business Plans.

During 2020, one hundred and sixty (160) renowned researchers, diplomats, delegations, students and faculty members visited CUI. Furthermore, five individuals, delegations and faculty members proceeded abroad.

Representation at EDEX Expo

Prof. Dr. Junaid Mughal, Chairman/ Incharge Academics, and Mr. Ali Tawab Baloch, Head of International Office represented CUI at Sri Lanka's largest education exhibition and job fair, EDEX Expo, held from 17th – 19th January 2020, in Colombo. On the sidelines of the Expo, CUI delegates held a meeting with Dr. Radhika Samarasekera, the Director General of COMSATS' Centre of Excellence in Sri Lanka, the Industrial Technology Institute (ITI). The meeting



helped explore avenues of mutual cooperation in R&D. During the meeting, the DG was also informed about research and scholarship opportunities available at CUI for faculty and students of ITI.

Seminar on COVID-19

The Centre for Policy Studies (CPS), CUI, held a seminar on “COVID 19 and the Nexus Between Global and National Health Governance: Policy Prescriptions for Addressing Pandemics” on 12th March 2020. By drawing on the existing and newly available knowledge on epidemics and pandemics, the seminar addressed the important aspect of policy formulation for COVID-19.

International Collaborations

CUI-Pakistan Linkages with Chinese Universities

CUI, Pakistan, is a pioneer in establishing a China Study Center at its campus in Islamabad, which has been instrumental in building linkages with Chinese universities and enhancing interest of study in China among faculty members and students of the university. CUI envisages working in close partnership with Chinese universities for joint research opportunities on projects that are pertinent to the global development agenda. CUI currently employs over 170 faculty members who are alumni of Chinese universities. In addition, more than 140 faculty members from CUI are presently pursuing PhDs in various top-ranked universities of China.

Other International Delegations

During the reporting period, CUI Pakistan, hosted international delegations from China, Italy, United Kingdom, and the US. During the meeting with the representatives of Coventry University, UK, possibilities for provision of scholarships to students and early career researchers at CUI were explored. Similar prospects were considered during the meetings with the delegates of University

Some other Distinctions of CUI			
Sr. #	Awardee	Award/ Achievement	Awarding Institute
1.	Dr. Musferah Mehfooz, Assistant Professor, Department of Humanities, CUI Lahore Campus	Research grant worth 1,000,000/- for project on “predicting the violent behavior in Pakistani youth exposed to community violence: moderating role of parenting”	Sustainable Development Policy Institute (SDPI)
2.	Mr. Nadeem Ghafoor, Assistant Professor, Department of Computer Science, Islamabad Campus	Grant worth 200,000/- for "Digital Book Repository"	DICE Shark competition
3.	Dr. Muhammad Yar, Interdisciplinary Research Center in Biomedical Materials (IRCBM), CUI Lahore Campus	Grant for development of advanced pro-angiogenic wound dressings for patients in Pakistan with diabetic ulcers and injuries.	British Council and HEC Innovative and Collaborative Research Partnership Grants Scheme
4.	Dr. Sannah Ejaz, Assistant Professor, Department of Architecture, Islamabad Campus	Certificate of Achievement (1st position) in Ideas Design Competition	Institute of Architects, Pakistan, Islamabad - Rawalpindi Chapter
5.	Dr. Iftikhar Zeb, Assistant Professor, Department of Biotechnology, CUI Abbottabad Campus	Selection in “2020 Master Class Residency Regional Approaches to Air Quality and Environment”	United States Embassy in Pakistan
6.	Dr. Farhad Zulfiqar, Assistant Professor, Department of Economics, Islamabad Campus	Nomination in 7th Lindau Nobel Laureate Meeting of the Laureates of the Sveriges Riksbank Prize in Economic Sciences	
7.	Dr. Muhammad Shahid, Associate Professor, Environmental Sciences Department of CUI Vehari Campus	Highly Cited Researcher 2020	Clarivate, Web of Science
8.	Department of Computer Science of CUI Vehari Campus	Huawei ICT Academy partner	Huawei

of Palermo, Italy, and Harbin Engineering University, China. Besides, the representatives of the Centre for Climate Research and Development (CCRD), CUI, in a meeting with Dr. James Schauer, Science Envoy for Air Quality from the US State Department, discussed prospects of establishing working relations for finding solutions to common challenge of air quality monitoring.

Exchanges/Academic Cooperation

During 2020, a limited number of motilities could be availed by CUI due to the pandemic outbreak. These included seven students who went on fully funded Erasmus+ program for Bachelors in Architecture (Middle East Technical University), and Computer Engineering and Electrical Engineering (Istanbul Sehir University).

During January to December 2020, a total of 17 international students joined CUI in undergraduate and postgraduate programs from 10 different countries mainly from Afghanistan, Benin, China, Iraq, Japan, Sri Lanka, Kenya, Sierra Leone, and USA. These students are enrolled in electrical Engineering, Mathematics, Meteorology, Management Sciences, Physics, Pharmacy, Environmental Sciences and Bio-sciences departments.

Admission of about 150 international students was deferred due to Covid-19 pandemic. Admission for international students is currently open for Fall 2021 semester under CUI general admission and various scholarships programs, including scholarship for students from COMSATS member countries with 15th June 2021 as last date for submission of application. Details of admission

CUI International Faculty 2020		
Name	Designation	Serving Department
Ms. Julian Eick Aziz (Germany)	Assistant Professor	Architecture & Design, CUI, Lahore Campus
Dr. Shariyeh Hosseini (Iran)	Associate Professor	Architecture & Design, CUI, Lahore Campus
Ms. Katherine Louis Sipra (USA)	Scientific Officer	Biosciences, CUI, Islamabad
Dr. Yasser MSA Al-Kahraman (Syria)	Assistant Professor	Pharmacy, CUI, Abbottabad
Dr. Kaneez Rabia (Germany)	Assistant Professor	Physics, CUI, Islamabad

procedure, scholarship information and application submission are available at: <http://ww3.comsats.edu.pk/internationalstudents/>

Under the Pak-Sri Lanka Higher Education Cooperation Programme of Higher Education Commission (HEC) of Pakistan, several Sri Lankan students will be offered scholarships for pursuing their undergraduate, postgraduate, and doctoral degree studies in various disciplines at CUI. The scholarship programme aims

Rankings with respect to SDGs by THE University Impact Rankings 2020		
1.	SDG 1 No Poverty	101-200
2.	SDG 3 Good Health and Wellbeing	401-600
3.	SDG 4 Quality Education	301-400
4.	SDG 5 Gender Equality	401+
5.	SDG 6 Clean Water and Sanitation	74=
6.	SDG 7 Affordable and Clean Energy	101-200
7.	SDG 8 Decent Work and Economic Growth	35=
8.	SDG 9 Industry, Innovation and Infrastructure	301-400
9.	SDG 11 Sustainable Cities and Communities	201-300
10.	SDG 12 Responsible Consumption and Production	201-300
11.	SDG 13 Climate Action	101-200
12.	SDG 14 Life Below Water	101-200
13.	SDG 15 Life on Land	101-200
14.	SDG 16 Peace, Justice and Strong Institutions	301-400
15.	SDG 17 Partnerships for goals	301-400

to promote an effective exchange of knowledge and better understanding of cultures and tradition between Sri Lankan and Pakistani students.

Foreign Faculty at CUI

CUI is committed to being a part of the regional transformation of higher education and is always welcoming qualified international faculty to be a part of this vision. This in turn enhances CUI's ranking prospects, which is also one of its priority goals.

Awards and Honors

CUI improved its position and was ranked 2nd in Pakistan and at 221 in world in THE University Impact Rankings 2020. CUI was ranked in 15 SDGs out of 17.

Council for Scientific and Industrial Research (CSIR), Ghana

The Council for Scientific and Industrial Research (CSIR) focuses on accelerating socio-economic development in Ghana through effective utilization of science and technology. The Council formulates and implements government policies regarding S&T based development.



R&D Activities

- The Food Research Institute of CSIR launched a "Safefish" project with the funding from the African Union and the European Commission. The project tends to improve Tilapia fish health which contributes 90.3% to the total aquaculture production. It will also focus on developing bacteriophage products for integrated fish disease management to minimize antibiotic use in fish production in Ghana.
- As part of the Modernizing Agriculture in Ghana (MAG) programme, the Institute for Scientific and Technological Information of CSIR (CSIR-INSTI) designed four digital applications to promote demand-driven research and support alternative methods of extension delivery. The four applications, namely the CSIR Technologies; CSIR Space; Kuafo Market Place; and Agritech Mobile Advisor are hosted on the Digital Agriculture Innovation Hub (DAIH) set up by the CSIR-INSTI.
- CSIR, Ghana, is executing a four-year partnership project to apply water-smart solutions, such as recycling to recover resources from waste water for reuse. Titled "Achieving Wider Uptake of Water-Smart Solutions," the project is being funded by the European Commission under its Horizon 2020 Research and Innovation programme. The project would facilitate industrial cooperation as means to increasing resource efficiency, limiting carbon emissions, and developing sustainable businesses based on water-smart solutions.

Establishment of Ghana Innovation and Research Commercialization Center (GIRC)

In line with the vision of President of Ghana, Hon. Nana Addo Dankwa Akufo-Addo, to increase R&D funding of Ghana to 2.5% of its GDP, a Ghana Innovation



and Research Commercialization Center (GIRC) was established at CSIR, Ghana. Funding for the basic research that led to the setting-up of the Center was provided by the Science Granting Councils Initiative (SGCI), a multi-funder initiative aimed at strengthening the research capacities of 15 countries in Sub-Saharan Africa. The GIRC is expected to prioritize eight identified Strategic Technology Areas (STAs) where Ghana has competitive advantage to help advance national development. Strategic Technology Centers linked to GIRC will be established across the country to provide support to actors in the eight STAs.

International Collaborations

During 2020, CSIR-Ghana, signed a five-year agreement with Lakehead University, Canada, to reinforce research and cooperation in sustainable forest management in Accra, Ghana. Under the Agreement, Lakehead University would also share its technological applications in geometrics, forest landscaping, remote sensing, satellite imagery among others to track forest health, structure and factors responsible for deforestation and forest degradation.

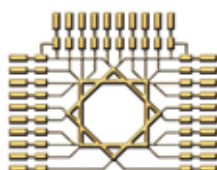
The Forestry Research Institute of Ghana (FORIG) of CSIR signed a Memorandum of Understanding (MoU) with thirteen bee-farming cooperatives in the Ashanti Region to train its members in bee farming business to help improve their economic

welfare and livelihoods. As part of the three-year Agreement, the CSIR-FORIG would provide technical and financial support to set-up the members for the production of honey.

Moreover, Institute of Industrial Research of CSIR (CSIR-IRR), Ghana, entered into a partnership with HATOF Foundation – environmental non-governmental organization – for an 18-month long project for effective waste management. The project is being led by Lancaster University, United Kingdom (UK), and has the patronage of the Global Challenges Research Fund through the UK Research and Innovation. Under this project, students from a local school would be trained to establish an integrated bio-digester, which would harness solar energy as well as use fecal waste to generate gas for cooking and other purposes. The waste from the digester would be used for agricultural purposes.

Higher Institute for Applied Science and Technology (HIAST), Syria

The Higher Institute for Applied Sciences and Technology (HIAST) was established in 1983. The Institute aims to develop the scientific and technological capacity of human



resources in various fields of applied science and technology so that it can actively contribute in the scientific and economic progress of Syria.

Scientific Events

HIAST in collaboration with the Arab School for Science and Technology (ASST), the Higher Commission for Scientific Research in Syria (HCSR), the Atomic Energy Commission of Syria (AECS) and COMSATS organized a workshop on “Challenges and Innovations in Nanotechnology” from 18th – 19th December 2019, in Damascus, Syria. The Workshop was aimed at providing effective platform for networking among Syrian and international researchers to help create a roadmap for nanotechnology advancement in Syria. During the two-day Workshop, the scientists from Iran and Pakistan discussed applications of nanotechnology in Functional Materials, Pharmaceuticals, Water Treatment, Membrane Technology, Medicine, Agriculture and Construction Materials, resulting in a number of relevant recommendations relating to enhancing cooperation, promoting investment in R&D, stronger liaison, and fostering public-private partnerships.



Industrial Technology Institute (ITI), Sri Lanka

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.



COVID-19 Related Developments

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

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

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. Since 2015, the Centre has been serving as a UNESCO Category II institution.



Recently, UNESCO Chair on "Medicinal and Bio-organic Natural Product Chemistry" has also been established at ICCBS, Pakistan.

ICCBS focuses on: research and training for producing high quality human resource; and extending diagnostic, analytical and clinical testing services to local and regional clients from public and private sectors.

COVID-19 Related Developments

- ICCBS paced up its research activities in response to coronavirus pandemic to help study the dynamics of the disease; genetic variations and their correlation with the disease severity; and progression and clinical outcomes of the disease. Research teams working at ICCBS are employing modern tools, methods and techniques for the genomic analysis of COVID-19 from Pakistan; establishment and optimization of diagnostic kit for COVID-19; study of virus-human cell interactions; and finding possible treatment of COVID-19.
- A team of young scientists at the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD) of the International Center for Chemical and Biological Sciences

(ICCBS), Pakistan, has identified potential therapeutic compounds against the novel coronavirus (SARS-CoV-2). Published in the Journal of Bimolecular Structure and Dynamics, their study reports the details of extensive computational experiments that lead to the identification of three FDA approved drugs, namely Remdesivir, Saquinavir, and Darunavir as well as two natural compounds as potential drug candidates against COVID-19.

- ICCBS, in collaboration with COMSTECH, has planned to support network institutions of Organisation of Islamic Cooperation (OIC) in developing diagnostic kits for COVID-19. These institutions belong to Azerbaijan, Bangladesh, Egypt, Gambia, Indonesia, Nigeria, Pakistan, Saudi Arabia, and Senegal. Earlier, ICCBS, COMSTECH and National University of Science and Technology (NUST), Islamabad, have also collaboratively conducted online training courses for building capacities of scientists in testing and developing diagnostic kits for COVID-19.
- The Center for Bioequivalence Studies and Clinical Research (CBSCR) of Dr. Panjwani Center for Molecular Medicine and Drug Research, ICCBS, in collaboration with the Indus





Hospital, Karachi, initiated the clinical trials of the Traditional Chinese Medicine (TCM) “Jinhua Qinggan Granules” in Pakistan as a treatment for COVID-19 mild patients. The study, being carried out with the approval of the National Bioethics Committee and Drug Regulatory Authority of Pakistan, will test the effectiveness and safety of the Jinhua Qinggan Granules on 300 mild-category male and female patients of COVID-19 for 5 to 10 days.

- ICCBS built ties with the National Disaster Management Authority (NDMA), Islamabad, by signing a Memorandum of Understanding (MoU) to support research, development, knowledge exchange, and training in natural and human-induced disasters in the country. Under this MoU, NDMA will also facilitate vaccine trials related to COVID-19 or any other infectious diseases approved by the trials approving authorities.

Technical Services

Under an MoU signed between ICCBS, Karachi, and Sindh Health Department, the HEJ Research Institute of Chemistry of ICCBS is providing technical support for the upgradation (Phase I) of Chemicobacteriological Laboratory (CBL) of Sindh Health Department. In the first phase, capacity building of staff for the CBL is being carried out by ICCBS,

which is due to complete in few months, apart from purchase of basic equipment. After the completion of the laboratory's upgradation work, CBL would be able to carry out selected forensic chemical tests as per international standards. On the other hand, to help meet the increased demand for coronavirus testing in Sindh Province of Pakistan, the Biosafety Level - III (BSL-III) laboratory housed at one of the research institutes of ICCBS has been developed into a COVID-19 diagnostic center. This has led to widened diagnostic capacity of COVID-19 infection in the province.

Awards and Honors

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

Prof. Choudhary has been appointed as the Coordinator-General of COMSTECH (the Organisation of Islamic Cooperation's (OIC) Standing Committee on Scientific and Technological Cooperation) by Dr. Arif Alvi, President of Pakistan and Chairman COMSTECH. This would be in addition to his current responsibilities as Director ICCBS.

International Collaborations

UNESCO Chair at ICCBS-Pakistan

ICCBS and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) have entered into an Agreement to mutually establish a UNESCO Chair on 'Medicinal and Bio-organic Natural Product Chemistry' at ICCBS. The UNESCO Chair was approved in UNESCO General Assembly held in September in 2020. The purpose of the Chair is to promote an integrated system of research, training, information and documentation on natural medicinal/ bio-organic product chemistry. According to the Agreement, ICCBS will arrange for the Chair to participate in UNESCO programmes and activities with a view to strengthen international academic cooperation as well as the exchange of professors, researchers, and students with other universities within the framework of the UNESCO's UNITWIN (University Twinning and Networking) Programme.

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. 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. The main research fields include the development of Dynamical Earth System Model and numerical simulation, meteorological, and environmental forecast and related disaster assessment theory and technique, data assimilation theory and methodology,



and earth system theory and natural cybernetics.

R&D Activities

Establishment of ocean multivariate (temperature, salinity, stratification, etc.) grid observation data set

In 2020, Associate Professor Lijing Cheng from ICCES established an oceanic multivariate (temperature, salinity, stratification, etc.) grid observation data set, serving 90 countries, including multiple Belt and Road countries. Mr. Lijing Cheng was selected as a member of World Climate Research Program-Data Advisory Committee. His related papers have been accepted and published by the top international journals, such as “Nature Climate Change” and “Nature”.

ICCES Earth System Model (CAS-ESM)

In 2020, the Coupled Model Intercomparison Project (CMIP) enters into the sixth phase. The CAS-ESM ver.2.0 was finalized in 2019; benchmark and historical simulation tests were completed and currently it has been undertaking future climate change prediction tests. CAS-ESM ver.2.0 was submitted to the official website of CMIP6, which will serve as an important reference for the sixth IPCC assessment report. Relevant simulation data can be downloaded and analyzed by international institutions, in particular for scientific research institutions in Belt and Road region and can be applied to the researches of tackling global and regional climate and environment change.

Scientific Events

Meeting of the FireMIP Working Group

Seventh internal meeting of the Global Fire Model Comparison Program (FireMIP) working group was held on October 21-22, 2020. Prof. Fang Li from ICCES organized the meeting. The online meeting had a participation of 43 experts from



14 countries. Prof. Li and Dr. Hantson reviewed the research achievements of FireMIP and introduced related FireMIP phase II plans. Seventeen experts introduced current research progress and potential cooperation of FireMIP projects. Matters discussed included fire assessment, extreme fire event simulation and analysis, modified fire modelling, and atmosphere-fire interaction.

Lecture by Associate Professor of Asian Institute of Technology

On 2nd January 2020, Dr. Vilas Nitivattananon visited ICCES and delivered a presentation on “Comprehensive Evaluation and Adaptability Research on Hydrological Disasters in the Chao Phraya River Basin of Thailand”. During his presentation, Dr. Vilas introduced prospect precipitation changes analysis in the 21st century based on Cordex data and then he showed the changes in drought and floods caused by future precipitation changes based on the simulation of HEC-HMS and HEC-RAS models. Twenty or so researchers and students of ICCES attended the seminar.

International Collaborations

MoU with Islamia University of Bahawalpur, Pakistan

In November 2020, ICCES signed an MoU with the Islamia University of Bahawalpur,

under which both parties agreed to cooperate on international exchange programmes. ICCES and the Islamia University of Bahawalpur, inter alia, agreed to encourage the development of the following exchange programs based on their respective academic and educational needs, such as organization of joint research programs, joint conferences and training workshops, academic exchanges and joint supervision of Masters, and Ph.D. students.

Participation in CCCS Webinar

In September 2020, COMSATS Centre for Climate and Sustainability (CCCS) hosted a webinar on the occasion of the first International Day of Clean Air for Blue Skies. From ICCES, Director Prof. Zhaohui Lin and Associate Prof. Chenglai Wu attended the webinar. Associate Prof. Chenglai Wu made a presentation entitled “Air quality prediction from regional to global scales”. During his presentation, he emphasized on significance of air quality prediction from regional to global scales. He also highlighted the challenges of data accuracy and uncertainties for air quality modeling.

Academic Exchanges

International Students

- Kritanai Torsri is a researcher at the Institute of Hydrological

and Agricultural Information (HAIL), which is committed to the development and application of science and technology in agriculture and water resources management to deal with climate change and has a long-term cooperation. In 2014, under the framework of China-Thailand cooperation agreement, Kritanai Torsri gained CAS-TWAS Scholarship to study at ICCES for doctoral degree and graduated in August 2020. Kritanai conducts research on the characteristics, mechanism and prediction of Thai extreme weather and climate disasters.

- Sherly Shelton, a doctoral student from Sri Lanka, focuses on extreme precipitation events which pose a serious threat to the socio-economic development of developing countries including Sri Lanka. He used Sri Lanka's rainfall and hydrological station observation data sets in combination with multi-source atmospheric re-analysis data to reveal cause and mechanism of Sri Lanka's extreme hydro meteorological events and hydrological anomalies in the past 30 years (1985-2015).
- Kalpana Hamal, a Nepalese post-graduate student completed her Masters degree in meteorology at ICCES with the funding of CAS Belt and Road Master Scholarship and graduated in May 2020. Subsequently, she secured ANSO scholarship.

Agreement on joint supervision of Ph.D. students with the National University of Kazakhstan

In December 2020, Director ICCES, Prof. Zhaohui LIN, signed a tripartite collaborative agreement for Doctoral Training with the National University of Kazakhstan for joint supervision of two doctoral students for their theses on 'Characteristics of atmospheric droughts and their future projections in Northern Kazakhstan' and 'Dangerous weather phenomena in western Kazakhstan in the context of climate change'.

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

Iranian Research Organization for Science & Technology (IROST) was founded in 1980 with the aim to support Iranian researchers, inventors and industrialists across Iran. This organization provides valuable services in fulfilling the country's scientific, technical and engineering requirements by supporting applied and developmental research, as well as developing new technologies by making use of qualified experts and modern equipment and facilities.



33rd Al-Khwarizmi International Award

On 17th February 2020, IROST held the 33rd Al-Khwarizmi International Award ceremony. The Award is conferred annually to researchers, inventors and innovators from all over the world for outstanding scientific achievements.

Ten laureates from Iran and five from Australia, China, South Korea, and the United States were conferred Khwarizmi International Award (KIA) by the President of Iran, H.E. Mr. Hassan

Rouhani. The selected projects related to the development of thermal solar energy technology, synthesis of peptide radioactive raw materials, research and development of pharmaceuticals from marine species, research, design and implementation of renewable technologies in micro-networks, and Bitban malware analysis platform.

COMSATS has been sponsoring the cash prize and certificates of the first and second prize winners of the Award since 2000.

National Research Centre (NRC), Egypt

National Research Centre (NRC) was established in 1956 to foster basic and applied scientific research, particularly in industry, agriculture, public health and other sectors of Egypt's national economy.



COVID-19 Related Developments

To help support national efforts against COVID-19, NRC developed and conducted clinical trials of four vaccines against the novel coronavirus (COVID-19). The four vaccines include an inhibitor vaccine consisting of the H1N1



influenza virus and induced pieces of the emerging coronavirus. The second vaccine is an inhibited vaccine for the coronavirus which has been grown on tissue culture. The third vaccine contains DNA loaded with parts from the DNA of coronavirus representing surface proteins from the virus. The fourth vaccine contains surface proteins from the virus which stimulate an immune system response to produce antibodies in four forms.

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.



National and Institutional Contributions to COVID-19 Pandemic Response

- Biosafety and Biosecurity Centre of RSS has been engaged in testing coronaviruses in bats as a part of a Global Research Project. To facilitate the local health authorities, it is also

- conducting test for COVID-19.
- National Software Quality Assurance Centre of RSS engaged with the Jordanian Ministry of Education to test the quality of online educational platform to assure software's readiness.
- RSS designed and launched an emergency management plan for its campus that hosts several sister organisations, including the Princess Sumaya University for Technology (PSUT), Jordan.
- RSS continued testing the quality of food, water, air and medical gasses during the lockdown period in March - May 2020 to ensure public health and safety.
- Biomedical engineering team of RSS worked closely with the Jordanian Ministry of Health to ensure timely maintenance of medical equipment all over the country.
- RSS's start-up incubator (iPARK) is supporting Khaleek bil bait – 'Stay at Home' – a mindset incubation and acceleration platform that launched an innovation hackathon on 2nd April 2020.
- RSS along with its sister organisations (the Princess Sumaya University for Technology, the Amman Baccalaureate School, the Higher Council for Science and Technology and the Jordan Museum) also launched a fundraising campaign to support the national efforts during the COVID-19 emergency.

- The WANA Institute – the think tank arm of the RSS – published a report entitled 'Chronicling the Coronavirus: A Perspective from Jordan' highlighting Jordan's response to the crisis in its initial weeks.
- RSS submitted a project on "COVID-19 in Wastewater Cycle: Survival, Risks and Surveillance" to UN-Habitat that was accepted in December 2020. The project will start in early 2021.

R&D Activities

Major research activities of RSS during 2020 included:

- Testing of SARS-CoV-2 in wastewater ad sludge in selected wastewater Treatment Plants in Jordan;
- "BIM for Energy Efficiency in the Public sector (BEEP)" project under the Framework of EU Funded Programme "ENI CBC Mediterranean Sea Basin Programme", in collaboration with Consiglio Nazionale delle Ricerche (CNR), Italy;
- Characterization of pharmaceutical compounds in different water sources (i.e., wastewater, surface and ground water) and food chain (i.e. vegetables) in Jordan;
- Improvement of wastewater treatment operations at Yarmouk Water Company (YWC);
- Guidance development and case study





documentation of green chemistry and technologies;

- High energy efficiency for the public stock buildings in Mediterranean (SOLE) Project;
- A first step valorization of waste atmospheric carbon dioxide via its sustainable capture;
- Study of the feasibility of decentralized olive mills' wastewater treatment;
- Completion of the Adapt ICT knowledge system, which will be used by farmers in Jordan Valley, under the programme of "Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Implementing Innovative Projects in Water and Agriculture in Support of Adaptation to Climate Change" supported by the UNFCCC-Adaptation Fund;
- Development of new tests for face masks;
- Development of new calibration service for forehead thermometer;
- New tests for medical ventilators; and
- Testing of governmental e-Services under the umbrella of the Jordanian Digital Transformation Project.

Establishment of Research Facilities

Institutional Capacity-building

- UK-Jordan El Hassan bin Talal Research Chair for Sustainability
- Advanced Research Centre under which six research units were formed for research in areas of materials design and discovery, biosynthesis and biocatalysis, emerging pollutants in water systems, light metal alloys, and computational atmospheric modelling.
- Pharmaceutical Innovation Division at RSS Biosafety and Biosecurity Centre

Capacity-building Activities

During the reporting period, RSS' events comprised of:

Workshops

- Capacity building in Information and Communication Technology (ICT) sector for Syrian Refugees, in customized intensive ICT training

programs (digital marketing or comprehensive web development), English language and soft skills courses;

- Specialized RETScreen Software Training in partnership with the German Development Cooperation office (GIZ) and Jordanian German Centre of Excellence for solar energy. The training was certified by the Canadian Institute for Energy Training (CIET);
- Under the Jordan's Second Biennial Report (BUR) Project, two capacity building activities were held for stakeholders from different ministries and national institutions. The first training activity was on the Low Emissions Analysis Platform (LEAP) and the second event was on 2006 IPCC Guidelines for the preparation of GHG National Inventories;
- Four training workshops were conducted by RSS, Jordan, for the capacity-building of construction workers regarding the building of rock gabions in the streams flowing into the Wala Dam of Jordan to prevent sediments flow into the Dam. The trainings were funded by GIZ, Germany; and
- The National Software Quality Assurance Centre of RSS conducted following specialized courses in software testing from 19th January to 4th February 2020:
 - ISTQB Certified Tester – Foundation Level course.
 - ISTQB Certified Tester – Foundation Level Agile Tester course.
 - ISTQB Certified Tester – Advanced Level – Test Analyst course

Webinars

RSS co-hosted a webinar with COMSATS Centre for Climate and Sustainability (CCCS) on Sustainable Water Governance in the Global South under Changing Climate (details in Chapter 4), on 8th October 2020.

Moreover, Eng. Jehan Haddad, Manager of Air Studies, at RSS participated as a speaker in webinar on “Energy Efficiency and Cleaner Production Practices in Industry Based on Sustainable Development”, co-hosted by CCCS and Environment and Cleaner Production Institute (ECPI) of TUBITAK, Turkey, on 25th November 2020.

Advocacy and Publications

- Opinion Editorial on “Steering a Course to Sanity for International Institute for Applied Systems Analysis (IIASA)” by HRH Princess Sumaya bint El Hassan, President of RSS, Jordan;
- Statement on “A Call for Unified National and Global Science and Technology Responses to the COVID-19 Pandemic” by HRH Princess Sumaya bint El Hassan, President of RSS, Jordan;
- Arab Women in Science (Editorial in Science magazine) by HRH Princess Sumaya bint El Hassan, President of RSS, Jordan;
- Women during the COVID-19 Era: Eye on Food Safety and Another Looking for Coronaviruses in Bats by Dr. Nisreen DaifAllah AL-Hmoud, RSS, Jordan; and
- Jordan’s Second Biennia Update Report for UNFCCC Secretariat on Climate Change prepared in collaboration with the Jordan Ministry of Environment and UNDP.

In addition, RSS issued several publications in reputed journals during the reporting periods that related to renewable energy, waste management, biotechnology, biodegradable materials, nanotechnology, biochemistry, and microbiology, among others.

International Collaborations and Agreements

RSS became a member of the International Institute for Applied Systems Analysis

(IIASA) in July 2020; elected member of the Alliance of International Science Organizations in November 2020; and elected member of the Compact Muon Solenoid Program at the European Organization for Nuclear Research (CERN), Switzerland, in August 2020.

Furthermore, agreements with following organizations were reached by RSS during 2020:

- British Academy for the establishment of Jordan – United Kingdom El Hassan bin Talal Research Chair in Sustainability (7th February 2020);
- CARBON LIMITS for the development of Article 6 strategy for supporting Jordan to participate in market mechanisms under the Paris agreement (10th February 2020);
- Mediterranean Agronomic Institute of Bari (CIHEAM-Bari), Italy (5th March 2020);
- Joint Venture with IK Healthcare, Geneva, to establish the Pharmaceutical Innovation Division at RSS Biosafety and Biosecurity Centre (22nd June 2020);
- United Nations Development Programme (UNDP) for joint program for investing in SDG Acceleration in Jordan (21st October 2020);
- Universiti Putra Malaysia for joint research and development work in materials design and discovery (30th June 2020); and

- Higher Council for Science and Technology (HCST), Jordan, on ‘Leaders in Innovations Fellowship (2020), Royal Academy of Engineering UK’ (4th February 2020).

Awards and Honors

The National Energy Research Centre at RSS won the Energy Globe Award - world’s most prestigious award for sustainability – for its work on “Solar Water Pumping Project in Jordan Valley and the Highlands”. The project involved the replacement of inefficient electrical and diesel irrigation pumps, and operating the 214 water pumps in the Jordan Valley and the southern valleys and 106 pumps in the highlands (Azraq, Mafraq and Madaba) with solar energy (PV systems).

The Scientific and Technological Research Council of Turkey (TUBITAK), Turkey

Founded in 1963 an autonomous public institution, the Scientific and Technological Research Council of Turkey is a national agency of Turkey whose stated goal is to develop science, technology and innovation (ST&I) policies, support and conduct research and development.





TUBITAK became COMSATS Centre of Excellence in 2019 in lieu of its Centre – TÜBİTAK Marmara Research Centre (MAM).

R&D Activities

Exhibition of R&D Products

TÜBİTAK Marmara Research Center (MAM), Turkey, participated in the first Smart Cities and Municipalities Congress and Exhibition held under the auspices of the President of Turkey, from 15th -16th January 2020, at Ankara, Turkey. The event provided a platform for cooperation and interaction among smart city technology producers, solution and service providers so as to establish an effective smart city ecosystem. TÜBİTAK MAM displayed its products including Fuel Cell Modules and Components, Lithium Ion Battery Samples, Trigen Project Fuels, Noise Maps and Noise Barriers, Dissolved Oxygen Sensor, National Flue Gas Analyzer (YEBA), Zero-Waste Approach in Treatment Sludge Management, Cavitation System, Smart City Sustainability Model, Environmental Label for Accommodation Facilities, Photovoltaic Solar Panel and Terahertz Imaging System.

Development of Hydrogen and Electric Cars

TÜBİTAK MAM, in collaboration with the National Boron Research Institute

(BOREN), Turkey, developed a new domestic car that is powered by an electric motor and hydrogen fuel. The car's hybrid engine allows it to travel up to 450 kilometers by utilizing electricity for 300 kilometers and hydrogen fuel for an extra 150 kilometers. The vehicle has zero emission value and accelerates to 100 kilometers in a very short time.

COVID-19 Related Developments

By using electrospun nanofiber technology, the Materials Institute of TÜBİTAK Marmara Research Center (MAM), Turkey, has produced “Nanofiber Filters” of high protection N95-N99/FFP2-FFP3 masks. The synthesized nanofiber filters have passed impermeability and breathing resistance tests according to relevant European standards. The produced mask filters feature a thinner and lighter material compared to their counterparts and offer high impermeability and low breathing resistance giving them an edge over the commercially available products.

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

As part of the project titled “Synthesis of Hydroxychloroquine Sulphate and Production in Tablet Dosage Form with



National Capabilities” conducted by the COVID-19 Platform of Turkey under the umbrella of TÜBİTAK, feasibility studies have started for synthesis of an active ingredient, Hydroxychloroquine Sulphate, and its production at large scale. Under the project conducted jointly with the Pharmaceutical Factory of the Ministry of National Defence, the studies aim to produce the tablet dosage form of 200mg Hydroxychloroquine Sulphate with indigenous resources.

Capacity-Building

Zero Waste Certification

Due to efficient waste management activities carried out under the aegis of “Zero Waste” project, TÜBİTAK Marmara Research Centre (MAM), Turkey, has been awarded with a “Zero Waste Certificate” by the Turkish Ministry of Environment and Urban Planning. Under the above-mentioned project, TÜBİTAK MAM has made significant improvements in



the reduction of waste generation, use of environmentally friendly products, waste sorting and recycling alongside increasing awareness of the employees on environment and zero-waste approach.

Project on Encouragement for the Production of Medicinal and Aromatic Plants with Municipalities in Marmara

TÜBİTAK MAM is collaborating with the Union of Municipalities of the Marmara Region, and Kocaeli Metropolitan Municipality for the project on “Encouragement for the Production of Medicinal and Aromatic Plants”. The project will be initiated by Kocaeli Metropolitan Municipality in the Kandıra Town of Kocaeli Province and aims to increase the income levels of villagers and farmers through various incentives. It will make use of human and technical resources of the collaborating parties for

the development and production of value-added industrial products in Kocaeli.

Awards and Honors

TUBITAK MAM's Senior Research Specialist Wins L'Oréal-UNESCO “For Women in Science” Program Award

Associate Professor Dr. Dilek Dünder Erbahar, Senior Research Specialist in CBRN Sensor Technologies Project Group at TÜBİTAK Marmara Research Center (MAM), Turkey, has been awarded L'Oréal-UNESCO “For Women in Science Prize”. The Award aims to celebrate the perfection of under 40 years of age women scientists conducting advanced scientific studies and to support the continuation of scientific studies by young talents. Dr. Erbahar aims to develop compact, high performance, mass-producible, economical and low power consuming

chemical sensors with high sensitivity against toxic gases. With the use of twisted bilayer graphene in sensor applications as a first in Turkey and in the world, it is targeted to further develop chemical sensors. It is aimed to create added value for Turkey by transferring the sensor system to be developed to the industry and national security sector and meeting the needs of security units and various state institutions and organizations in military and industrial sectors.

Tianjin Institute of Industrial Biotechnology (TIB), China

Tianjin Institute of Industrial Biotechnology (TIB), Chinese Academy of Sciences (CAS) is a non-profit national research institute jointly established by CAS and Tianjin Municipal



Government in 2012. TIB's mission is to strengthen its capabilities in innovation and technology-transfer so as to become a global leader for research and development in industrial biotechnology.

COVID-19 Related Developments

Scientists from the Tianjin Institute of Industrial Biotechnology (TIB), China, together with other Chinese R&D institutions, including Capital Medical University, Institute of Microbiology, and Beijing Institutes of Life Science isolated two neutralizing antibodies— B38 and H4—that bind to the glycoprotein spike of the SARS-CoV-2 virus and thereby prevent the virus from entering host cells. Isolated from recovered COVID-19 patients, the two antibodies were found to neutralize the virus in cell culture and target a shared epitope. Experiments already carried out on mice confirmed the antibodies can reduce the virus load in the lungs and can be mixed to contain the infection.



Post-Coordinating Council Virtual Presentation Sessions

In continuation of the deliberations of the 23rd Meeting of COMSATS Coordinating Council virtually held in July 2020. COMSATS Secretariat held weekly virtual sessions wherein Centres of Excellence shared their programmes and activities held since the last Coordinating Council Meeting. These sessions helped facilitate interaction among Centres in order to initiate joint programmes for the benefit of the Member States.

The presentations made during these sessions highlighted the mandates, current activities, major programmes, new initiatives, R&D activities, future plans as well as offers of collaborations sought and extended by Centres in various areas. An account of these is covered in the relevant segment of Chapter 1. The following section covers major achievements and research related developments, including those relating to COVID-19, made by Centres during the reporting period.

Al-Farabi Kazakh National University (KazNU), Kazakhstan

Prof. Tlekkabul Ramazanov, Vice-Rector for Research Science & Innovations at KazNU, Kazakhstan, shared progress of the University during the preceding year as: implementation of 492 projects; 126 research projects in collaboration with business enterprises; and 142 projects with grant funding from Ministry of Education and Science of Kazakhstan.

Sharing KazNU's response to COVID-19 crisis, Prof. Ramazanov stated that KazNU is setting-up a Digital University Electronic Campus – the first ever smart university in Central Asian region. He also communicated that KazNU aspires creating 25 “Start-up companies” and 8 small innovative enterprises by the year 2022.



Al-Quds University (AQU), Palestine

Dr. Radwan F. H. Qasrawi, Assistant Professor of Information & Communication Technology at AQU, Palestine, informed that the university has established Al-Quds Business Center for innovation, technology, and entrepreneurship (B-CITE) that currently has 182 entrepreneurial projects, conducted 8 training programs, has 517 partnerships, and 6878 beneficiaries.

He also briefed about the Environmental and Sustainability Innovation Technology (ESIT), which is a research facility that helps develop a comprehensive, multidisciplinary and interdisciplinary approach to research, education, policy, and development to overcome Palestine's energy obstacles. He also noted the three hubs of the institute as: 1) Clean Technology Innovation Hub; 2) Waste Water Treatment Innovation Support Hub; and 3) Science and Technology Innovation Support Hub.

Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh

Dr. M. Nashir Uddin, Director Planning and Development at BCSIR, Bangladesh, informed that BCSIR's Genomic Research Laboratory has sequenced more than 300 whole-genomes of SARS-CoV-2

strains collected from different divisions of Bangladesh to aid national and global COVID-19 response.

It was noted that BCSIR has published 141 research papers, won 8 patents, and developed 12 industrial processes during last year.

Centro Internacional de Fisica (CIF), Colombia

Prof. Eduardo Posada, Director of CIF, Colombia, informed that a pilot project has been developed and relevant consultations are being made with the Government of Colombia and other stakeholders in the country for scaling-up of CIF's research projects on sugarcane production.

Among others, CIF plans to:

- Construct an eco-park in Casanare Department of Colombia;
- Develop technologies for tropical fruit processing and preservation; and
- Digitize the power consumption of National University of Bogotá.

COMSATS University Islamabad (CUI), Pakistan

Prof. Dr. Muhammad Tabassum Afzal, Rector CUI, informed that CUI has established collaborative R&D

infrastructure to foster research and innovation that includes Sino-Pakistan Joint Research Centre for Buffalo, and CUI – TIB Joint Institute of Biotechnology which is at planning stage. A project led by CUI has also won research grant for collaborative research projects under ANSO for 2020 – 2021.

According to CUI's SDGs ranking for the year 2020, the University has made fair progress towards Goal 1 (No Poverty), Goal 6 (Clean Water and Sanitation), and Goal 8 (Decent Work and Economic Growth).

Council for Scientific and Industrial Research (CSIR), Ghana

Dr. Daniel Asenso-gyambibi, Director CSIR-Building and Road Research Institute, (CSIR), Ghana, informed that CSIR is using Biotechnology for crop production with a focus on cereals, roots & tubers, as well as horticultural crops, tree crops and food processing.

Other advances by the Institute that were highlighted included improved "Akosombo Strain" of Nile Tilapia fish which grows 25-30% faster than the wild and other local stocks; collaborative work with Unilever and World Agroforestry Centre, Nairobi; and work on technologies for production of Allantoin Oil.

Embrapa Agrobiologia, Brazil

Dr. Robert Boddey, Research Scientist at Embrapa Agrobiologia, Brazil, informed that Embrapa Agrobiologia has established a network of experiments for research and technology-transfer and also offers training in microbiology and molecular biology.

It was informed that Embrapa houses National Research Center for Agrobiologia which conducts research, inter alia, in the areas of biological nitrogen fixation (BNF) in legumes and non-legumes; molecular biology (genomics and proteomics) of



soil and nitrogen fixing microorganisms; microbial diversity of microorganisms and soil fauna; organic agriculture; rehabilitation of degraded areas; bioenergy crops; nutrient cycling; and greenhouse gas emissions in agroecosystems.

Higher Institute for Applied Science and Technology (HIAS), Syria

Dr. Chadi Albitar, Director of Scientific Collaboration, Media and Publishing, HIAS, Syria, noted that 44 Engineers, 71 Masters, and 6 PhDs have graduated from HIAS during the period 2019-20. In addition to this, HIAS has published 8 scientific books and 25 research papers in International Scopus ranked journals during this period.

HIAS has been cooperating with the Ministry of Agriculture to implement management information system for animal resources in Syria. HIAS has also initiated joint research with the General Commission for Scientific Agriculture Research (GCSAR) to improve pomace oil extraction, and providing water and air pollution assessments.

Regarding the future plans of HIAS, Dr. Albitar informed that the institute plans to build a new nanotechnology laboratory, launch a new Master's program in Aeronautics, and upgrade its educational system to comply with credit system standards.

Industrial Research and Consultancy Centre (IRCC), Sudan

Dr. Omer Kamal, Researcher, IRCC, Sudan, informed that major research developments during the 2019 related to: development of knowledge and small industries; projects in agricultural manufacturing and renewable resources utilizations; and projects in efficiency of industrial business. Some other achievements during the year included: capacity-building activities, including 3 short training courses, and 21 institutional and technical trainings. IRCC has also established following three institutes during 2019:

- Cleaner Production Centre;
- Energy Design Centre; and
- Mining & Building Material Laboratory.

It was noted that a cooperation agreement with Shanghai University of Engineering Science, China, was also signed by IRCC during 2020.

Industrial Technology Institute (ITI), Sri Lanka

Dr. Radhika Samarasekera, Director General, Industrial Technology Institute (ITI), Sri Lanka, informed that ITI has established 'China-Sri Lanka Joint Biotechnology Laboratory' under the MoU



signed between Ministry of Science and Technology, China, and the Ministry of Higher Education and Scientific Research, Sri Lanka.

Research output of ITI during 2019-20 included: 26 scientific publications in referred journals, 90 international and local communications, 10 patents, and 05 book chapters. Dr. Radhika also informed that ITI's scientists have won 10 national awards for Science and Technology achievements, and presidential awards.

ITI has made a number of technology transfers to SMEs, micro entrepreneurs and large enterprises in 2019, including applications in fruit-vegetable based products; cereal-based products; herbal cosmetics; and herbal drugs and health supplements.

International Center for Chemical and Biological Sciences (ICCBS), Pakistan

Prof. Dr. Farzana Shaheen, ICCBS, Pakistan, noted COVID-19 related activities of the Centre as: sequencing of SARS-COV-2 as well as facilitation to the Government of Pakistan through setting-up a diagnostic facility and conducting over 100, 000 tests for COVID-19. Furthermore, ICCBS established:

- Modern Forensic DNA and Serology Laboratory;
- National Institute of Virology.

ICCBS also won many awards including the 'China International Science and Technology Cooperation Award' awarded

to Prof. Atta-Ur-Rahman, Patron-in-Chief of ICCBS. Dr. Shaheen also noted that Center had collaborations with ITS, TUBITAK and TIB during the year 2019.

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

Prof. Zhaohui Lin, Director of ICCES, China, noted ICCES' activities during 2019 as: establishment of International Network on Climate and Environment Sciences (INCES), and holding of two international conferences on climate & environmental sciences.

ICCES also started various projects to achieve SDGs, including enhancing the forecast and preparedness capacity for climate and environmental disasters; development of a for weather-to-climate prediction; and establishment of the Southeast Asia Regional Climate Change Information System (SARCCIS).

It was informed that ICCES is planning to establish ANSO Technology Center for Earth System Modeling and Prediction (ATC-EaSyMP) with involvement of COMSATS' Member States.

International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica

Prof. Charles N. Grant, Director General, ICENS, Jamaica, informed that under IAEA Coordinated Research Project years (2019-2024) of worth €35,000, ICENS is working on enhancing nuclear analytical techniques to meet the needs of forensic

science. The project is aimed to use nuclear analytical techniques such as INAA to help investigations of food forensics/food fraud, potentially adulterated pharmaceuticals and illicit drugs.

Furthermore, it was learnt that ICENS' work on Climate Change and Biogeochemistry focuses on soil carbon and land-use with the following targets to be achieved till 2023:

- measure soil carbon stock and assess carbon quality across major land-use types island wide (e.g. coastal forest, agricultural lands);
- survey 50% of major agro-ecological zones across Jamaica;
- collect soil-based GHG emissions data from 50% of major agro-ecological zones across Jamaica;
- training in forestry emissions modeling; and
- running of emission models to generate forestry GHG inventory.

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

Dr. Alireza Allahyari, Director General for International Cooperation, IROST, Iran, highlighted some of the technologies developed by IROST as: development of engine prototype for DME and Bio-diesel fuel; Biotechnology Pilot Plant facility; Vertical Wind Tunnel; and Hemodialysis Machine.

It was also learnt that in addition to being home to 7 technology institutes, IROST has 131 knowledge-based units and incubators; 472 commercial



technologies; and 412 technologies for commercialization.

National Mathematical Centre (NMC), Nigeria

Prof. Stephen E. Onah, Director, NMC, Nigeria, informed that NMC is collaborating with the National Defense College (NDC) and Baze University of Abuja for the following research projects:

- Big Data Analysis and Simulation of Terrorism Activities in Nigeria; and
- Development of Big Data Security Architecture for Enhancing National Security.

NMC's progress on the following initiatives was also highlighted: UNESCO Chair – Research Group on Capacity Development for Algebraists; Ethno-Mathematics Research Group; Computational Mathematics Research Group; and Artificial intelligence (AI) and Computer Human Interactions (CHI) Research Group.

National Research Centre (NRC), Egypt

Prof. Hosam El-Sayed, Assistant Vice President for Research, NRC, Egypt, noted the research output of his Centre during

2019 as: 2,180 publications (SCOPUS), 21 approved patents, 71 NRC awards, 36 convoys, and 233 book chapters. Furthermore, NRC made funds available for various projects, including technology transfer and assigned research projects as well as collaborative research projects with Italy and Romania.

While noting the NRC's efforts against COVID-19, Prof. Hosam stated that NRC funded eight research projects to face COVID-19 and pre-clinical trials for four COVID-19 vaccines are also underway.

Collaborations with other centres included establishment of Centre of Excellence for Research & Applied Sciences on Climate Change & Sustainable Development of National Research Centre at the start of 2020.

Royal Scientific Society (RSS), Jordan

Some major achievements and developments of RSS shared by Eng. Abeer Arafat, Assistant to the President for Organizational Knowledge Documentation, RSS, Jordan, included:

- Launching of Arab Charter of Ethics in Science at World Science Forum 2019 by HRH Princess Sumaya bint El Hassan, President of RSS;

- Designing of Multi-Level Integrated Monitoring, Reporting and Verification (MRV) System for Greenhouse Gas Emissions & Mitigation of Climate Change;
- Second Phase Launch of the EU Funded Project “Transfer of Environmentally Sound Technology (TEST)” in cooperation with UNIDO;
- Regional workshop on entrepreneurship for scientists and engineers in COMSATS member states; and
- Election of RSS to Executive Board of IAP for Science, Seoul, South Korea.

It was also informed that RSS has made considerable progress in achieving Sustainable Development Goals (SDGs), particularly, Goal 4 (Quality Education); Goal 6 (Clean Water and Sanitation); Goal 7 (Affordable and Clean Energy); Goal 12 (Responsible Consumption and Production); Goal 13 (Climate Action); and Goal 17 (Partnerships for Goals).

Sepuluh Nopember Institute of Technology (ITS), Indonesia

Prof. Bambang Pramujati, Vice Rector of Research, Innovation, Partnership and Alumni at ITS, Indonesia, informed that ITS developed a robot for assisting the medical personnel during the COVID-19



pandemic.

Focused areas of ITS for research include: manufacturing, transportation, and logistics; sustainable energy; artificial intelligence and biomedical technology; advanced materials and nanotechnology; internet of things and defense technology; agri-food and biotechnology; climate change and disaster mitigation; maritime science and technology; fundamental sciences and infrastructure and sustainable environment.

Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

Dr. Lugano Wilson, Director of Engineering Development, TIRDO, Tanzania, informed that TIRDO has produced COVIDOL for battling COVID-19 pandemic, which is a natural blend of plants with zero addition of chemicals.

He also noted that the activities of TIRDO are highly related to the Sustainable Development Goals 1, 2, 6, 7, 9 and 13. TIRDO's activities during 2019 included: research and development of coal briquetting; development and transfer of mushroom substrate blocks; value addition on leather and leather products in pastoral areas in Arusha region; and controlling post-harvest losses through hybrid

biomass solar drying technology.

The Scientific and Technological Research Council of Turkey (TUBITAK), Turkey

Prof. Dr. Orkun Hasekioğlu informed that in 2018, 27,468 projects/experts received funding, and an amount of 1.9 Billion TL was given to departments as academic research funding, technology innovation funding, science fellowships grants, and science and society programmes funding.

He also informed that TUBITAK has 348 ongoing international cooperation projects, including 161 bilateral, 105 COST, and 82 ERA-NET.

Tianjin Institute of Industrial Biotechnology (TIB), China

Prof. Jibin Sun, Deputy Director-General of TIB, China, highlighted the activities of TIB under South-South Cooperation that included establishment of Joint Center on Plant Natural Products in collaboration with the International Center for Chemical and Biological Sciences (ICCBS), Pakistan.

In another collaboration, TIB signed cooperation agreements with COMSATS University Islamabad (CUI), Pakistan; and Al-Farabi Kazakh National University (KazNU), Kazakhstan. A collaboration

with Iranian Research Organization for Science and Technology (IROST), Iran, pertained to organization of a symposium in order to initiate collaborations on the development of active components in microalgae, and enzyme engineering for high value compounds.

National Technology Innovation Center of Synthetic Biology (NC-Synbio) was officially approved by the Ministry of Science and Technology (MoST) of China in 2019 to be established at TIB.

TIB also hosted the 20-day International Training Course on Industrial Synthetic Biotechnology in which 21 young scholars from 10 Belt & Road countries including COMSATS' member countries were trained.

University of The Gambia (UTG), The Gambia

Prof. Faqir Muhammad Anjum, Vice Chancellor of UTG, The Gambia, informed that UTG is serving as the powerhouse for the transformation of The Gambia through creation, application, and transfer of knowledge as well as leading government's capacity development and research projects. He informed that UTG is making considerable progress in achieving Goal 4 (Quality Education) and Goal 17 (Partnership for Goals).

Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia

Prof. Ahmed Ghrabi, Director General of CERTE, Tunisia, highlighted CERTE's intellectual output as: 110 international research articles/publications, 03 books, and 17 PhD and 48 Master theses.

Moreover, it was informed that CERTE organized 2nd Atlas Geo-Resources International Congress: Applied Geo-resources for Groundwater (AGIC'2019); and CMGA8 8th Maghrebien Symposium.

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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, or implementing educational programmes. Other than CUI, two COMSATS flagship projects, COMSATS Internet Services (CIS) and COMSATS Telehealth (CTH) continue their operations and are being overseen by COMSATS Secretariat. The administration related to graduate students from Member States studying at CUI is also a special assignment of the Secretariat. Activities of COMSATS Centre for Climate & Sustainability (CCCS) that have grown over the last year or so and COMSATS' Science Diplomacy have also been summed up in this Chapter.



COMSATS Tele-health Programme (CTH)

The year 2020 has been the year of pandemic for the whole world. COVID-19 emerged as a driver of sudden changes at all levels, especially in healthcare sector. Lockdowns, shortage of doctors, social distancing needs and closure of OPDs in tertiary care led to a major paradigm shift for health professionals, policy makers and patients in terms of better utilization of telehealth. Studies show a stark upward trend in the use of telemedicine with a drop in physical visits during the COVID-19.

With the outpatients in tertiary care hospitals closing down during 2020, COMSATS Telehealth (CTH) continued playing its role in provision of healthcare, capacity-building programs and awareness campaigns. The focus of most of these activities remained upon information dissemination related to pandemic,

training of the telehealth staff and patient care in COVID and non-COVID cases without much exposure to both patients and the doctors.

Access to Healthcare

The year started with relatively low influx of telemedicine patients in the four telehealth clinics at Pind-Sawika, Gokina, Quetta and Gawadar. Early during the year, the sudden surge on the pandemic led to a drastic drop in the number of patients presenting at telemedicine, the main reasons being the lockdowns imposed by the government, fear of pandemic and the closure of OPD based services.

As pandemic gained momentum in the country, policy makers and health authorities started to realize the importance of telehealth as a tool to provide healthcare to keep movement of patients to a minimum. As other digital health and telemedicine initiatives

mushroomed within Pakistan, COMSATS telehealth endeavored to expand its network of telemedicine clinics through new collaborations with the Government of Balochistan through People's Primary Healthcare Initiative (PPHI), resulting in establishment of new telehealth clinics at Mastung, Dukki, Cowki Jamali and Washuk.

By the time the first wave subsided, a number of these centres had been established and the number of patients consulting these clinics spiked. After the initial months, the patients' number declined as the second wave hit the country. During the reporting period, the total number of patients presenting to telemedicine clinics leveled around 4,000.

Majority of the patients benefitting from CTH were women seeking facilitation for maternal care and antenatal ultrasounds.



Capacity-Building

Awareness Session on COVID-19

As soon as COVID-19 pandemic hit Pakistan, it was realized that safety and precautions of the workplace are the only measures to prevent disease spread within the organization. Therefore, an awareness campaign was launched within the Secretariat that included preparation of SOPs and the information material for the employees. In this connection, on 9th March 2020, an awareness talk on “Corona Virus preparedness in the workplace”, was held at COMSATS Secretariat for the employees. The talk delivered by Dr. Zawar Ali (Vaccinologist and Travel Health Physician at Excel Labs, Pakistan) covered various aspects of the epidemic, including disease prevention and control.

Training on Sexual/Reproductive Health with WHO and Government of Pakistan

A collaboration between COMSATS, World Health Organization (WHO) and the Ministry of National Health Services, Regulations and Coordination (MoNHSR&C), Government of Pakistan, resulted in organization of a virtual training on Sexual, Reproductive and Maternal Health (SRH) for telemedicine providers. Other than COMSATS, telemedicine providers of two other organizations, Sehat Kahani and Human

Development organization also joined the training. The need for this training was realized by the closure of tertiary care OPDs, travel restrictions and lock down in various areas of Pakistan, turning telemedicine as a significant mean of health services provision.

The training was imparted to telehealth professionals in two phases. In the first phase (held from 8th to 12th June 2020) doctors from telehealth centres of the participating organization were trained while in the second phase (13 to 24 July 2020) focus was on the training of the lady health workers and community health workers affiliated with the telemedicine organizations.

The session introduced them to new concepts, techniques in SRH and a refresher of the older ones still in use. The training provided a whole package of care from pre-natal period to post-natal care of the pregnant women along with the other aspects of women's health on the whole. In addition, good practices on the use of Personal Protective Equipment (PPEs) as recommended by WHO and other preventive measures to be taken by the reproductive and maternal health professionals within the context of COVID-19 were also the part of the course.

Four master trainers arranged by the

WHO under guidance of Pakistan's Ministry of Health were the resource persons for the training. These included Dr. Samina Naeem Khalid (Associate Professor with Health Services Academy and Senior Consultant (SRH) at WHO Islamabad); Dr. Nusrat Shah (a well-known Gynecologist and a Professor in Dow Medical College and Civil Hospital, Karachi); Dr. Qudsia Uzma (National Professional Officer, Maternal, Newborn, Child and Adolescent Health at WHO); and Dr. Sobia Khateeb (a clinical psychologist running Sobia Khateeb Foundation).

The training phases were graced by the notable presence of Dr. Palitha Mahipala (WHO Country Representative, Pakistan); Dr. Malik Muhammad Safi (Director General Health at MoNHSR&C); and Dr. S.M. Junaid Zaidi (Executive Director COMSATS) during the closing ceremony of the phase one while Dr. Nirmini Hemachandra (WHO Regional Office for the Eastern Mediterranean, Egypt); Ms. Ellen Thom (Technical Officer WHO), and Dr. Atiya Aabroo (Deputy Director Programmes, MoNHSR&C) were some notable speakers to conclude the second phase of the training.

Outcomes of technical sessions of the virtual training were aided by videos and interactive comments and question & answer sessions. The participants found the training useful in enhancing their capacity and appreciated training curriculum with special considerations for COVID-19. The training also helped address existing misconceptions and taboos related to SRH.

Webinar on Digital Health in COVID-19

In the wake of pandemic, the boost gained by digital health services led COMSATS to organize an event, aimed at gathering relevant stakeholders from South Asian Member States of COMSATS for sharing experiences in response to the pandemic, in particular, COVID-19 related digital health developments at governmental and



institutional level. As a result, COMSATS, in collaboration with the Commonwealth Centre for Digital Health (CWCDH), on 7th September 2020, organized a webinar titled “Digital Health in COVID-19: Sharing Experiences of COMSATS’ South Asian Member States”. Speakers from the three South Asian member countries i.e. Pakistan, Bangladesh and Sri Lanka, participated in webinar that was attended by a significant number of relevant individuals from Pakistan and abroad.

The event had participation from eminent speakers belonging to a number of areas of expertise relating to the theme of the event, these included:

- Dr. Sania Nishtar (SAPM on Poverty Alleviation and Social Protection and Federal Minister to Government of Pakistan);
- Dr. Vajira Dissanayake (Chairperson CWCDH);
- Dr. Selim Reza (Deputy Secretary for Ministry of Science and Technology, Bangladesh);
- Prof. Dr. Md. Aftab Ali Shaikh

(Chairman BCSIR, COMSATS Center of Excellence);

- Dr. Anil Jasinghe (Secretary for Ministry of Environment and Former Director General, Health Services, Sri Lanka);
- H.E. Vice Admiral (R) Mohan Wijewickrama (High Commissioner of Sri Lanka to Pakistan)
- Ambassador (R) Fauzia Nasreen, (Advisor SDGs, COMSATS Secretariat);
- Dr. Ghazna Khalid (Member of Prime Minister’s Task Force on COVID-19, Government of Pakistan);
- Dr. Nowshin Jabin (Chattogram Medical College Hospital, Bangladesh);
- Dr. Anil Samaranayake (Director, Health Information, Ministry of Health, Sri Lanka);
- Ms. Lubna Yaqoob (Senior Specialist Digital Health and Information System HPSIU, Ministry of National Health Services Regulations and Coordination (NHSR&C).

Discussions during the event touched

upon issues relating to cooperation in policy and strategy sharing at governments and institution levels; data collection and analytics; joint publications based on indigenous researches and success stories; training of doctors and young practitioners for better pandemic response; application of digital technologies for pandemic as well as for non-emergency response, building better infrastructure in remote areas that are affected the most in both situations. Details of this event can be found in Chapter 4.

Observance of Breast Cancer Day

With October celebrated as the Breast Cancer Awareness Month worldwide to help generate necessary support and awareness about the disease, COMSATS Secretariat highlighted the impact of this issue of great concern to help the population of the world by holding a webinar. The webinar entitled “Breast Cancer Awareness: Give Hope, Save Lives”, was virtually held on 29th October 2020, joined by the participants from COMSATS Secretariat and its flagship projects.

Information on this event is available in Chapter 4.

Visitors and Collaborations

On 30th July 2020, a two-member delegation from Yaran-e-Watan visited COMSATS Secretariat and CTH Resource Centre (located at CIS) and discussed potential collaboration on digital health and ICTs. Dr. Zafar Mirza was shown around various technologies and telehealth facilities available with CTH. Dr. Zaidi extended offer of support to Yaran-e-Watan initiative through its Internet Service Provider. The meeting resulted in COMSATS Internet Services joining hands with Yaran-e-Watan as technical partners.

On 2nd July 2020, Ms. Tanya Aidrus (Special Assistant to Prime Minister on Digital Pakistan Initiative) visited various facilities of COMSATS’ flagships projects, i.e., COMSATS Internet Services (CIS) and



COMSATS Telehealth (CTH) housed at CIS Technology Park, Islamabad.

On 6th August 2020, Prof. Dr. Ghazna Khalid (honorable Member of the Parliament, Member Task Force on COVID-19, MoST, Pakistan) visited COMSATS Secretariat and met COMSATS' officials to discuss possible collaboration with CTH with regard to Pakistan's government response to COVID-19. Potential avenues of cooperation were also explored in areas of mutual interest for launching joint programs in Pakistan as well as other Member States of COMSATS.

Other visitors of telehealth Resource Centre in reporting year include, Dr. Zaeem Zia (District Health Officer Islamabad); Mr. Muhammad Jahanzeb Khan (Deputy Chairman Planning Commission); Mr. Khalid Rafiq (DG-IT Board, AJK) and Secretary Health (KPK). In addition, District Support Managers of PPHI, DHO (Washuk) also visited the rural telehealth clinics in their respective areas after setting up of these clinics were completed.

During the calendar year, a virtual visit of the telehealth for Mr. Mahmoud Farfoura from the Royal Scientific Society (RSS), Jordan, was arranged. Mr. Farfoura was invited to virtually join the ongoing tele-consultations at the Resource Centre in Islamabad and was briefed about the operations regarding telemedicine.

COMSATS and NDMA MoU for Cooperation in Telehealth Services

Since its inception, CTH is continually striving to expand its quality services digitally to all parts of country.

A Memorandum of Understanding (MoU) was signed between COMSATS' flagship project, i.e., COMSATS Internet Services (CIS), and the National Disaster Management Authority (NDMA) of Government of Pakistan, with an aim to support tele-health services and trainings in natural and human-induced disasters. CTH is currently housed at CIS for technical and operational convenience. NDMA has been working to enhance disaster resilience in Pakistan and is the leading policy and coordination body for combating natural and human-induced disasters in Pakistan.

The MoU was signed by Dr. S.M. Junaid Zaidi (Executive Director COMSATS), and Mr. Muhammad Idrees Mehsud (Member DRR, NDMA), in a ceremony held at NDMA at Prime Minister's Office, Government of Pakistan, on 16th October 2020. Lieutenant General Muhammad Afzal (Chairman NDMA); Prof. Dr. Ghazna Khalid (Member of the Parliament and Member Task Force on COVID-19) along with representatives from both sides witnessed the signing of the agreement.

Under this agreement, NDMA is facilitating the provision of tele-health

services through the Resource Center at Isolation Hospital and Infectious Diseases Treatment Centre (IHITC) recently inaugurated in the wake of COVID-19 with the support of China. On the other hand, CIS shall mobilize resources and help build the technical capacity of IHITC. Furthermore, through this MoU, training activities shall also be carried to help build the capacity of the personnel in various aspects pertaining to natural and human-induced disasters.

COMSATS Internet Services (CIS)

Operational since 1996, COMSATS Internet Services (CIS) is the pioneer Internet Service Provider (ISP) of Pakistan, offering 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, Telehealth and Internet-related research facilities.

CIS is currently operating in 20 cities and has customers belonging to prominent organizations 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 affairs are managed by a Board of Management headed by Dr. S.M. Junaid Zaidi, (Executive Director COMSATS). Dr. Zaidi made significant contribution for the future growth of CIS which includes expansion of network, introduction of new services like IOT, launching new nodes in other regions and establishment of new Tele-Health Centers in Baluchistan.

CIS Core Services

CIS offers nine services known as 'The Colors of CIS', comprising: Tornado®



(Wireless broadband), Hawaii™ (Domain, hosting, and VPS) and COMSpeed™ (Optical Fiber Connectivity). The value added services of CIS are Hurricane™ (On-demand broadband), Prism™ (Website development), Viacon™ (Video conferencing), COM Meeting™ (web Conferencing Service) and COMSATS Innovation and IoT.

Data Centers

CIS expanded its IT & Data Center infrastructure with the latest state of the art equipment at CIS Technology Park building, Islamabad. In-order to grab the emerging opportunities, setting standard services and customer satisfaction.

CIS' data centres include the features: Capacity of 1,526 Sq. ft. and approximately 45 racks can be accommodated; IPV6 enabled (27001:2013 ISO Certified); Precision Cooling System alongwith Humidity Controller; Fire Suppression alongwith four Stage Fire Alarm; N+1 Electric System including UPS and backup electric generators; Power backup facility; Deployed L-Root Servers; Entirely backed Cyber Security System with round the clock surveillance; Completely Biometric Security System and Advanced Huawei & Juniper firewalls protectors.

Innovation and IoT Department

R&D in energy sector under CIS-IoT has

resulted in developing the Net Metering, generating real time report for client to monitor energy utilization. Other related activities include development of the following IoT applications/tools: Soil Moisture Detector, Bird Eye View and Surveillance System Development. Further, IoT related R&D work of CIS pertains to manufacturing and construction, transportation, retail, S&T, ITC, educations, healthcare, energy and agriculture. Some specific work includes:

- On-going planning and implementation of IoT-based sensors for civic system;
- Portal development to connect vehicle tracking system for online and precise tracking of organizational fleet;
- Cyber security solutions to connect with peripheral devices to bound network Security;
- State-of-the-art ERP and "One Window Online" development;
- Solutions for securing network bounding and online threats;
- R&D for motion based sensors in field on network surveillance and in agriculture;
- R&D and AI-based software for detection of cancerous tumor and primary health prenatal issues.

Video Conferencing

Video conferencing was being used for communicating for past few years in-order

to limit travel cost and save time, Due to COVID-19 in reporting year, the rapid shift toward virtual systems and online platforms for meetings resulted in further utilization of related services of CIS. CIS provides video-conferencing services within Pakistan and abroad by means of well-equipped Video Conferencing Studios, located in Islamabad, Peshawar, Lahore and Karachi. During 2020, the video-conferencing platforms were also established for the potential customers as per demand.

Bandwidth Growth

To ensure high uplink and downlink speeds for customers, CIS gets bandwidth from multiple providers. In the reporting year, CIS bandwidth grew from 5 in 2019 to 6 Gbps in 2020.

ComClinic (Telehealth)

The current status of CIS Tele-clinics, alongwith activities in the capacity of digital health services of the reporting year have been covered in the earlier section of this chapter.

COMSATS Centre for Climate & Sustainability (CCCS)

In recognition of the inter-connections between climate change and sustainable development, COMSATS Centre for

Climate & Sustainability (CCCS) was set-up in 2019 to serve as an innovative partnership model to work in a spirit of global solidarity to solve shared challenges within the framework of South-South and Triangular Cooperation.

A primary driver for establishing the CCCS network was to encourage developing countries to develop greater connectivity and cooperation among members of the network and to build closer linkages among countries of the Global South in addressing common challenges within the framework of the Paris Climate Agreement and the 2030 Development Agenda.

In pursuit of this vision, CCCS mobilized COMSATS member states and its institutions to foster information exchange, knowledge sharing, sharing of good practices, collaborative actions and multi-partnerships based on South-South and Triangular Cooperation.

CCCS functions as a virtual platform for promotion of multi-stakeholder interaction across the 4Cs: Connectivity, Communication, Coordination and Collaboration.

Membership

So far, twenty COMSATS member states are a part of CCCS network though 25 institutions. In order to increase Africa's representation in CCCS' network, discussions were held with representatives from five Senegalese institutions. Virtual meetings were also held with the Potsdam Institute for Climate Impact Research, Germany, and the University of Kent, UK, to initiate cooperation.

Focus on SDGs and Working Scope

CCCS member institutions agreed to focusing on 7 Sustainable Development Goals (SDGs) considered crucial for developing countries in terms of



their relevance to climate change and sustainable development. These goals are: SDG-2 (Zero Hunger), SDG-3 (Good Health and Well-being), SDG-6 (Clean Water and Sanitation), SDG-7 (Affordable and Clean Energy), SDG-11 (Sustainable Cities and Communities), SDG-13 (Climate Action), and SDG-15 (Life on Land).

Subsequent to the understanding reached on the 7 SDGs, focus was made on identifying partner institutions that were willing to work in the specific

research areas under each SDG. There was considerable interest in working on the 7 SDGs and as a result the institutions conveyed their responses which enabled CCCS to draw up a comprehensive listing.

Webinars

In the backdrop of COVID-19 pandemic, CCCS opted to start with a series of webinars so as to keep the member institutions connected and cooperation among them continued. By the end of the year, CCCS had organized/co-organised



SDG, Related Scope of CCCS' Work and Partners

Sustainable Development Goals (SDGs)	Research Areas	Participation of CCCS Member Institutions
SDG 2: Zero Hunger End hunger and ensure safe, nutritious and sufficient food for all	<ul style="list-style-type: none"> Agriculture productivity/ Food Security Malnutrition Resilient Agricultural Practices Genetic Diversity of Seeds Agricultural Waste Management Improving Agricultural Land Climate Smart Agriculture Climate Smart Agriculture Food safety/Food quality Value added food Post-harvest losses reduction and management Genetic improvement of livestock Tree crops for household food security 	<ul style="list-style-type: none"> TIB, CAS, China CIF, Colombia CCC&SD, NRC, Egypt University of The Gambia CSIR, Ghana West Africa Science Service Centre on Climate Change & Adapted Land Use (WASCAL),Ghana University of Tehran, Iran RSS, Jordan CCCS, KazNU CCCS, Nigeria CCRD, Pakistan Al-Quds University, Palestine ITI, Sri Lanka CCCS-IRCC, Agricultural Research Center-Sudan TIRDO, Tanzania
SDG 3: Good Health & Well-Being Ensure healthy lives and promote well-being for all at all ages	<ul style="list-style-type: none"> Health & Nutrition Impacts of Environmental Toxicology on Health Monitoring and Dispersal of Vectors of Infectious Diseases Supplementary food for specific patients. Safe drinking water / Functional food formulation. Traditional herbal based food 	<ul style="list-style-type: none"> TIB, CAS, China CCC&SD,NRC, Egypt ICENS, Jamaica RSS, Jordan ICCBS, Pakistan CCRD, Pakistan Al-Quds University, Palestine ITI, Sri Lanka CCCS-IRCC, FMOH- food research Center-Sudan
SDG 4: Quality Education Foster International Collaboration in ensuring education	<ul style="list-style-type: none"> Sustainable Community Development and Education Community Capacity building for Sustainable Development 	<ul style="list-style-type: none"> TIB, CAS, China CCCS, KazNU
SDG 6: Clean Water and Sanitation Ensure access to water and sanitation for all	<ul style="list-style-type: none"> Water Resources Management Water Quality Hydrology Water Recycling Wastewater Treatment Water Metering and Pricing Groundwater Management Agriculture Runoff Pollution Salt Water Intrusion 	<ul style="list-style-type: none"> TIB, CAS, China IFRD,BCSIR, Bangladesh ICCES, China CIF, Colombia CCC&SD,NRC, Egypt University of The Gambia CSIR, Ghana (Water Research Institute) University of Tehran, Iran RSS, Jordan ICENS, Jamaica CCRD, Pakistan Al-Quds University, Palestine ITI, Sri Lanka NCPC and CCCS at IRCC, Higher Council for Natural Resources-Sudan TIRDO, Tanzania CERTE, Tunisia Environment and Cleaner Production Institute (ECPI),TUBITAK MRC, Turkey
SDG 7: Affordable and Clean Energy Ensure access to affordable, reliable, sustainable and modern energy	<ul style="list-style-type: none"> Renewable Energy (Solar, Wind and Biofuel) Energy Efficiency Biotechnology Applications for production of Biogas and Biofuel 	<ul style="list-style-type: none"> IFRD,BCSIR, Bangladesh TIB, CAS, China University of The Gambia RSS, Jordan Al-Quds University, Palestine ITI, Sri Lanka NCPC, CCCS and UNESCO chair on Technology transfer at IRCC, General Directorate of Renewable Energy TIRDO, Tanzania Environment and Cleaner Production Institute (ECPI),TUBITAK MRC, Turkey

SDG 11: Sustainable Cities and Communities Make cities inclusive, safe, resilient and sustainable	<ul style="list-style-type: none"> • Mitigation of GHG Emissions • Air Quality • Solid Waste Management • Wastewater Management • Environmental Impacts of Urbanization • Environmental Toxicology • Adaptation Measures Against Climate Risks • Impacts of Urbanization on Regional Climate Change • Urban Weathers and Climate Extremes (urban flooding and Urban Heat Island • Noise levels • Safe disposal of wastewater • impact of climate change on critical infrastructure • Natural Disasters and Economy • Land use change and physical planning imperatives 	<ul style="list-style-type: none"> • ICCES, China • TIB, CAS, China • CCC&SD,NRC, Egypt • University of The Gambia • University of Iran, Tehran • ICENS, Jamaica • RSS, Jordan • CCCS, KazNu • CCRD, Pakistan • ITI, Sri Lanka • NCPC- NLTC, CCCS at IRCC and University of Khartoum (U of K)- Sudan • TIRDO, Tanzania • Environment and Cleaner Production Institute (ECPI),TUBITAK MRC, Turkey
SDG 13 : Climate Action Take urgent action to combat climate change and its impacts Mitigation for Climate Change	<ul style="list-style-type: none"> • Impacts and vulnerability assessment on major socioeconomic sectors 	<ul style="list-style-type: none"> • ICCES, China • CIF, Colombia • CSIR, Ghana • University of The Gambia • University of Ghana Centre for Climate Change and Sustainability Studies (C3SS) • ICENS, Jamaica • CCCS,KazNu • CCCS, Nigeria • CCRD, Pakistan • ICCBS, Pakistan • Al-Quds University, Palestine • ITI, SriLanka • UNCST, Uganda • FHENR, IRCC-Sudan • TIRDO, Tanzania • CERTE, Tunisia • Environment and Cleaner Production Institute (ECPI),TUBITAK MRC, Turkey
	<ul style="list-style-type: none"> • Adaptation to Climate Change 	<ul style="list-style-type: none"> • CCC&SD,NRC, Egypt • CSIR, Ghana / University of Ghana Centre for Climate Change and Sustainability Studies (C3SS) / West Africa Science Service Centre on Climate Change & Adapted Land Use (WASCAL), Ghana • University of Tehran, Iran • RSS, Jordan • CCRD, Pakistan • ITI, Sri Lanka • NCPC , CCCs at IRCC and FHCENR -Sudan • TIRDO, Tanzania • CERTE, Tunisia • Environment and Cleaner Production Institute (ECPI),TUBITAK MRC, Turkey
	<ul style="list-style-type: none"> • Multi-scale characteristics of regional climate change, with focus on weather and climate extremes • Quantitative evaluation of climate change impact on water resources, agriculture, energy, etc • Enhancement of Prediction capability for multi-scale hydro-meteorological disasters • Projection of future climate change and its uncertainty analysis • Geographic Information System/ Remote Sensing • Meteorological Modeling 	<ul style="list-style-type: none"> • CIF, Colombia • ICCES, China • University of Tehran, Iran • U of K and IRCC-Sudan • CCRD, Pakistan • TIRDO, Tanzania • CERTE, Tunisia

SDG 15: Life on Land Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	<ul style="list-style-type: none"> • Biodiversity conservation /Ecosystem • Land Degradation and Desertification • Environmental Policy • Sustainable Land Use • Land Use and Land Cover Changes • Analysis of the impact of climate change on the biodiversity (climate models) 	<ul style="list-style-type: none"> • CIF, Colombia • ICCES, China • CCC&SD,NRC, Egypt • University of The Gambia • CSIR, Ghana • CSIR, Ghana / West Africa Science Service Centre on Climate Change & Adapted Land Use (WASCAL) • University of Tehran, Iran • ICENS, Jamaica • CCCS, KazNu • CCCS, Nigeria • CCCS-IRCC and ENDRI, CCCS-NRC at IRCC and UNESCO chair on Desertification –Sudan • CERTE, Tunisia
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nine webinars on a range of subjects in the context of the agreed SDGs. CCCS webinars generated a lot of interest and in the process over 65 scientists, researchers and policy makers were involved. Besides, CCCS partner institutions, numerous other institutions around the world attended the webinars. An important aspect of the CCCS webinar initiative was to develop closer working links with partner institutions by inviting them to co-host the webinars. This helped to forge stronger connections with partners.

In 2020, five webinars were co-organized with the following partner institutions:

- National Research Council of Egypt,
- Royal Scientific Society of Jordan,
- Tanzania Industrial Research and Development Organization,
- Environment and Cleaner Production Institute of Council for Scientific and

Technological Research Council of Turkey,

- Uganda National Council on Science and Technology.

Held on 22 December 2020, the last webinar was organized in cooperation with the Islamic World Educational, Scientific and Cultural Organization (ICESCO). The webinars covered in detail in other parts of this report were on the following topics.

- Climate Change Risks and Impacts on Vulnerable Communities Post COVID-19 with National Research Centre (NRC), Egypt (8th July 2020);
- Impacts of Climate Change on South Asian Monsoon (28th July 2020);
- International Day of Clean Air for Blue Skies (7th September 2020);
- Challenges to Agriculture and their Solutions in the Global South (9th September 2020);

- Sustainable Water Governance in the Global South under Changing Climate with Royal Scientific Society (RSS), Jordan (8th October 2020);
- Challenges of Rapid Urbanization in the Global South with Tanzania Industrial Research & Development Organization (TIRDO), Tanzania (29th October 2020);
- Energy Efficiency and Cleaner Production Practices in Industry Based on Sustainable Development with Environment and Cleaner Production Institute (ECPI), TUBITAK, Turkey (25th November 2020);
- Challenge of Reducing Food Loss and Waste to Improve Food Security in the Global South with Uganda National Centre for Science and Technology (UNCST), Uganda (29th November 2020); and
- Air Quality under South-South



Cooperation: What Works for Developing Countries, through the Lens of Science, Technology and Governance with Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco (22nd December 2020).

Collaboration with United Nations Office on South-South Cooperation (UNOSSC)

Cooperation between COMSATS and UNOSSC continued under an agreement signed in November 2018 between the two.

Information material on CCCS was featured in the UNOSSC South-South Galaxy portal so that UN member countries and UN agencies could learn about the mission and work of CCCS. CCCS will continue to intensify its connectivity with UNOSSC for knowledge exchanges and collaboration opportunities.

Information on all the webinars organized by CCCS as well as in cooperation with its partners was regularly posted on the Galaxy portal. Additionally, COMSATS and UNOSSC has been projecting each other's activities reciprocally through social media network.

CCCS Web Portal

Recognizing the critical importance of digital platforms, a CCCS website has been designed and developed for building connectivity, and collaboration among COMSATS' partner institutions as well as for showcasing the work of CCCS at the international level. Features and modalities of the website are being strengthened for a stronger impact. Discussions on launching of the portal early during 2021 are ongoing with COMSATS Internet Services (CIS).

Going Forward

CCCS efforts of building a network of scientists and experts is in line with the increased recognition that science,

technology and innovation are the primary drivers for a more sustainable and prosperous future. Going forward, the Center is aimed to continue co-opting new member institutions in the Global South as well as with institutions from the North so that it can better engage in Triangular Cooperation.

CCCS platform will be strengthened by connecting with partner institutions to explore and identify potential areas of collaboration, share knowledge and expertise, offer perspectives and solutions and create networks for cooperative activities in addressing key challenges of climate change, sustainability and development.

COMSATS Science Diplomacy Programme

Since inception, COMSATS has been engaged in advocacy of Science at all levels through its different organs. Through activities under Science Diplomacy Programme, the organization aims to address the needs of scientists, diplomats, journalists and policy-makers to build peace and harmony among nations through scientific knowledge. During 2020, the activities under the programme included relevant international observances, government engagement and COVID-19 awareness, and discussions and

exchanges on key topics.

International Observances

World Science Day for Peace and Development

To observe World Science Day for Peace and Development, a seminar was arranged on November 10, 2020, with the collaboration of United Nations Educational, Scientific and Cultural Organization (UNESCO) Pakistan, the Organization of Islamic Cooperation Standing Committee on Scientific and Technological Cooperation (COMSTECH), the Economic Cooperation Organization Scientific Foundation (ECOSF), the Pakistan Science Foundation (PSF) and the Pakistan Academy of Sciences (PAS). The seminar was attended by the senior officials of the afore-mentioned organizations and the members of COMSATS Secretariat.

H.E. Mr. Chaudhry Fawad Hussain, Federal Minister for Science & Technology, graced the occasion with his guest appearance. Speaking on the occasion, Mr. Fawad stated the Day as an occasion to renew our commitment to the cause of science, i.e., peace and development, and advancing scientific knowledge and its practical applications to bring peace and harmony in the world. In the wake



of pandemic and recent success of Pfizer and BioNTech in developing COVID-19 vaccine, Mr. Fawad emphasized the need of vaccine at equitable and free basis to all.

Speaking on the occasion, Prof. Dr. M. Iqbal Choudhary, Coordinator General (COMSTECH), highlighted the need for responsible science where fruits of human ingenuity must reach to the ones with most need. Dr. Choudhary added, this day is a reminder for us to go back to the basics, start looking science from the perspective of a philosopher, embrace the characteristics of logic, reasoning, conceptual rigor, and most importantly argumentation.

Dr. M. Aslam Baig, Secretary General (PAS), Prof. Dr. Manzoor Hussain Soomro, President (ECOSF), Ambassador (R) Fauzia Nasreen, Advisor SDGs (COMSATS), and Dr. Zabta Khan Shinwari, Professor Emeritus (QAU) also spoke on the occasion.

Some young students with their innovative projects and S&T solutions also made a strong case for advocacy and use of Science in society.

The Guest of Honour, Ms. Patricia McPhillips (UNESCO Pakistan), sharing her remarks on occasion, advocated open science through sharing of scientific data

and information among all stakeholders. She stated that UNESCO promotes the concept of open science to encourage the exchange of global experiences and best practices in order to deal the challenges in improved way.

International Day for South-South Cooperation

On 16th September 2020, an international webinar on “Current Challenges: Imperative of South-South Cooperation”, was arranged by COMSATS in order to mark UN’s International Day for South-South Cooperation.

Speaking on the occasion (on the behalf of the Executive Director COMSATS), Ambassador (R) Shahid Kamal, Advisor (Climate Change and Environment at COMSATS), introduced COMSATS as an active proponent of South-South Cooperation for over a quarter of a century that has acquired special significance in recent years owing to the increased global recognition of significance of South-South Cooperation. Highlighting COMSATS’ linkages in the Global South, he considered COMSATS’ collaboration with the United Nations Office for South-South Cooperation (UNOSSC) and South-South Galaxy to be of pronounced significance for achieving the shared mandate of betterment of the developing South.

H.E. Mr. Chad Blackman, Barbados Ambassador and Permanent Representative to the UN and other international organizations based in Geneva, Switzerland, in his remarks underscored the importance of South-South cooperation that has acquired further significance in wake of COVID-19. He noted that the countries with medium and low income, are most vulnerable to emergent situations caused by pandemic and climate change. Mr. Blackman opined that the interlinking issues of developing countries makes them more complex and hard to resolve.

Speaking on the occasion, Dr. Denis Nkala, Regional Coordinator and Representative at UNOSSC, Asia and the Pacific Office, shared key findings of a survey assessing the level of cooperation amid COVID-19 pandemic. He remarked that institutions in the South should work in cooperation with IGOs like COMSATS to fight global issues such as climate change. He further highlighted the need of taking bold actions to address the biggest threats and avail opportunities by pooling resources, collecting data and better planning in the Global South.

Senator Hazel Thompson-Ahye of Trinidad and Tobago appreciated COMSATS’ part in the field of education and its efforts to





address increased discrepancies in the education system that surfaced during pandemic. Ms. Ahye stated that mutual cooperation and support is absolutely necessary to find solutions to common problems and achieving the global agenda of 2030 in these challenging times.

Ms. Ellen Thom, Technical Officer, Reproductive Health at WHO Pakistan represented H.E. Dr. Palitha G. Mahipala, Head of Mission, WHO Pakistan. Speaking on his behalf, Ms. Thom remarked the need for strong collaboration in health sector in order to harmonize approaches among countries as well as to share experiences in the areas of service delivery, governance and emergency response.

International Day of Clean Air for Blue Skies

CCCS hosted a webinar to mark the first ever International Day of Clean Air for Blue Skies, on 7th September 2020. The event was aimed at sharing knowledge, good practices, and experiences on various aspects of air pollution and impact of deteriorating air quality on sustainable development and growth.

The webinar attracted environmental experts from China, Japan, Kazakhstan, Pakistan, Tanzania, and Thailand. These included: Ms. Maria Katherina

Patdu, Coordinator, Asia Pacific Clean Air Partnership, United Nations Environment Programme (UNEP); Dr. Eric Zusman, Senior Policy Researcher/ Area Leader, Institute for Global Environmental Strategies (IGES), Japan; Prof. WU Chenglai, Associate Professor, International Centre for Climate and Environment Sciences (ICCES), Institute of Atmospheric Physics (IAP), China; Ms. Madina Tursumbayeva, Senior Lecturer, Department of Meteorology and Hydrology, Al-Farabi Kazakh National University (KazNU), Kazakhstan; Mr. Zia Islam, National Program Manager, National Ozone Unit, Ministry of Climate Change (MoCC), Government of Pakistan; and Ms. Jacqueline Godfrey Mwendwa, Research Officer, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania.

The event was moderated by Dr. Anjum Rasheed, Assistant Professor, Centre for Climate Research and Development (CCRD), COMSATS University Islamabad, Pakistan. Speaking on the occasion, Ambassador (R) Shahid Kamal, Head of CCCS, highlighted the significance of reinforced environmental policies and international cooperation to promote clean technologies.

Speaking on the occasion, Ms. Patdu from Asia Pacific Clean Air Partnership, UNEP,

highlighted the deleterious impacts of air pollution on human health in the Asia Pacific region while citing some statistics in this connection.

The representative from the Institute for Global Environmental Strategies (IGES) in his talk focused on the integration of air pollution control strategies and identified conventional controls, development priority and next-stage solutions as three layers of solutions for air quality improvement. He was of the view that the international financing mechanisms, technology platforms and investment channels could help fill critical funding gaps for 'development priority' solutions.

Mr. Zia ul Islam (MoCC, Government of Pakistan), highlighted the challenges and prospective eco-friendly solutions in various areas, including industries, transport, brick kilns, SMEs, agriculture, and waste management, among others. He expressed his concern over introduction of Euro-V fuel in Pakistan in the backdrop of old vehicular fleet, non-compliant refineries and unprepared government machinery.

Ms. Tursumbayeva, in her talk, highlighted three ways to measure Volatile Organic Compounds (VOCs) i.e. whole air sampling, active sorbent tubes sampling and SPME in grab sampling mode. In the

occasion, Prof. WU discussed air quality prediction from regional to global scales.

Ms. Mwendwa presented the case study of Dar-es-Salaam and underscored the effects of air pollution by the reason of traffic congestion. She considered air pollution by urban traffic a major health hazard and wrapped her talk by a suggestion of placement of a nation-wide monitoring system and corresponding database in order to combat air pollution.

The event was concluded with the recommendations that underscored:

- Need for science and research-backed solutions for combating of air pollution;
- Robust coordination and integration mechanisms for reduction of air pollution;
- Promotion of effective air monitoring and forecasting systems;
- Integration of climate change policies to achieve SDGs and co-benefits on human health, environment and economy; and
- Strengthening partnerships at the regional and international levels.

International Youth Day

COMSATS in collaboration with ICYF-ERC, THE Society, ICHI Foundation China, IEEE-CUI, USIDHR, GSW International Youth Union Azerbaijan, COVID-19 Youth Task Force and Pakistan-Azerbaijan Alumni Association,



organized a Seminar titled “Youth Engagement for Global Action”, on 12th August 2020, to mark UN’s International Youth Day (IYD).

The event was hosted at COMSATS University Islamabad. The objective of the seminar was to encourage youth engagement at national and international levels and making our institutions capable of responding to global challenges identical to pandemic and climate change in an effective manner. Alongside some physical participation, the event was virtually joined by a number of audience, including the diplomats, parliamentarians, social activists and youth leader across the globe.

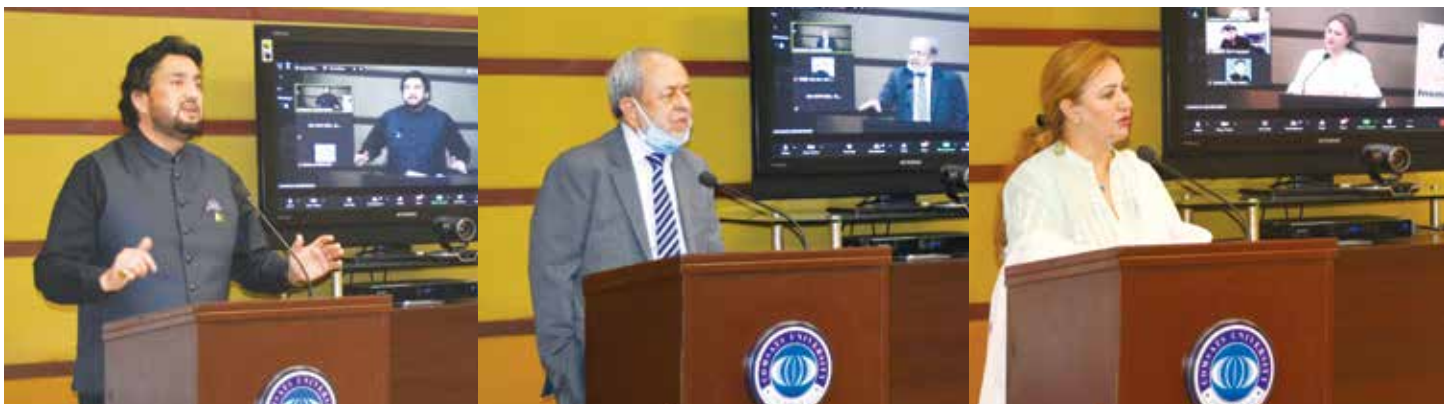
Prof. Dr. Muhammad T. Afzal, Rector CUI, inaugurated the session by his welcome remarks. His talk emphasized the need for tapping the youth’s potential in order to make them responsible members of

a harmonious society, for which CUI is playing its due role.

Honorable Mr. Shehryar Khan, Pakistani Minister to SAFRON and Narcotics & Chairman Kashmir Committee, honored the event as a Chief Guest. Speaking on the occasion, Mr. Afridi appealed the international bodies to make serious efforts to ensure the equality and justice as a basic human right for all.

The event was also attended by Prof. Dr. Ghazna Khalid, Advisor to NDMA on COVID-19. Ms. Khalid deemed the youth involvement necessary for the socio-economic uplift and building a knowledge based economy. She considered refugee crisis in various parts of the world a major challenge for youth development.

Ms. Liu Jian, Co-Founder Illchi Foundation China, highlighted the challenges, opportunities, engagements





and S&T related projects for youths. Mr. Elmaddin Mediyev, Director General ICYF-ERC, considered implementing effective policy measure crucial for better engagement of youth in OIC member states.

Speaking on the occasion, Ms. Isabelle Vladioiu, Founder US Institute of Diplomacy and Human Rights, shared her experience as an immigrant youth in the United States. In her opinion, youth have a key role in global peace, diplomacy as well as policy development.

The keynote speaker of the seminar was Mr. Ziauddin Yousafzai, father of Ms. Malala Yousafzai, a Peace Noble Laureate from Pakistan. Based on his experience, he spoke on the significance of right of safe education and equal opportunities of growth for female youth. He emphasized the need for better integration of women in development process.

Concluding the event, the coordinator of the event, Engr. Qaiser Nawab, highlighted the role of COMSATS towards youth development in the South which he linked to 2030 Agenda for Sustainable Development.

World Cities Day

To mark United Nations World Cities Day 2020, CCCS organized a webinar on “Challenges of Rapid Urbanization in the Global South”, on 29th October 2020. The webinar was co-organized with COMSATS’ Centre of Excellence, Tanzania Industrial Research and Development Organization (TIRDO).

Moderated by Dr. Lugano Wilson, Director of Engineering Development, TIRDO, the webinar included speakers from China, Iran, Kazakhstan, Sudan, and Tanzania.

The talks and discussions of the event touched upon a number of important issues related to urbanization that included: land-use planning, controlling emissions caused by transport and industrial sector, reduction in arable land, over-population, and waste management. Adopting waste-to-energy approach was deemed crucial as a sustainable option to address waste and energy related problems.

Breast Cancer Awareness Month

With October celebrated as the Breast Cancer Awareness Month worldwide to help generate necessary support and

awareness about the disease, COMSATS Secretariat highlighted the impact of this issue of great concern to a big population of the world by holding a webinar entitled “Breast Cancer Awareness: Give Hope, Save Lives”.

Held on 29th October 2020, the event was opened by Ambassador (Retd.) Fauzia Nasreen, Advisor (SDGs) at COMSATS, who highlighted the need for early diagnosis, access to proper medical facilities, affordable and timely care as the cornerstones of breast cancer control. She emphasized on having effective measures for overcoming lack of knowledge, appropriate facilities, family support and fear related to cancer in our society.

In her keynote address, Dr. Farheen Raza, Chief Registrar Radiology Department at Pakistan Institute of Medical Sciences (PIMS) Islamabad, emphasized the importance of regular screening and the need to have community-based health education component in treatment of the disease. She proposed a one stop breast cancer clinic with the aim to answer financial, cultural, mental and physical needs of women as one of the ways forward towards reducing breast cancer cases.

Dr. Samina Naeem, ex-Associate Professor of Health Services Academy, and Consultant at WHO Pakistan, gave a comprehensive overview of the disease. Dr. Azeema Fareed, Principal Medical Officer, COMSATS Secretariat and Coordinator of the session opined that breast cancer awareness is not only needed among women but everyone from family and society who are a part of the recovery journey. As a member of the pioneer team of telehealth in Pakistan, she also hoped to initiate telemedicine training for medical practitioners in remote areas for helping to address the issue nationwide.

While sharing her story during the webinar, a breast cancer survivor, Dr. Fauzia Cheema, drew attention to the lack of psychological, emotional and social support for cancer patients and urged having cancer support groups to help such patients deal with the mental and physical trauma attached with such serious ailments.

Discussion Session on Future of S&T System in Pakistan

On 29th April 2020, a meeting was held at COMSATS Secretariat to discuss the future prospects of S&T in Pakistan. The meeting was attended by the dignitaries, including Prof. Dr. Atta-ur-Rahman (Chairman of Prime Minister Task Force on S&T, Pakistan); Dr. Akram Sheikh (Co-Chair and Distinguished Senior Fellow at Global Think Tank Network (GTTN), Islamabad); Prof. Dr. Muhammad Iqbal Choudhary (Coordinator General of COMSTECH & Director of the International Center for Chemical and Biological Sciences (ICCBS), Karachi); Prof. Dr. Anwar-ul-Hassan Gilani (Former Chairman of the Pakistan Council for Science & Technology (PCST), Islamabad); Dr. Aslam Baig (Distinguished National Professor at the National Centre For Physics (NCP), Islamabad); Dr. Kauser Abdulla (Distinguished Professor and Dean of Postgraduate Studies at Forman Christian College, Lahore); Dr. Zabta Khan Shinwari (Professor of Biotechnology at Quaid-e-Azam University, Islamabad);

Dr. Khalid Mahmood Khan (Secretary General NASIC); Mr. Parvez Butt (Former Chairman PAEC; and Dr. S. M. Junaid Zaidi (Executive Director COMSATS).

Discussing the future prospects of S&T, Professor Atta-ur-Rehman shared his views by stating that: “The COVID-19 has seriously affected the national and global development by upsetting progress of all sectors in the short and long-run. Progress in S&T is the key to mitigate the aftermath of this crisis”.

Speaking on the occasion, Dr. Zaidi, Executive Director, highlighted the necessity of investment in emerging technologies and moving towards contemporary science. He urged to adopt creative and innovation-led mechanisms to overcome barriers of economic growth and national development.

Issues regarding the progression of S&T across country alongwith the role of the present scientific institutions constituted key points of discussion. Moreover, the effects of worldwide pandemic on the development at global level were also the part of the meeting.

The participants suggested some

avenues to improve S&T infrastructure in the country, including KPIs and routine evaluation of S&T institutions; mainstreaming the use of ICT in Ministries; more funding for important S&T interventions and R&D; importance of STI, industrialization and digitalization in national development.

Some Interactions with Host Country, Pakistan

The Chairperson COMSATS Consultative Committee

Dr. S. M. Junaid Zaidi, Executive Director COMSATS, met H.E. Mr. Fawad Chaudhry, Federal Minister for Science and Technology (MoST), Government of Pakistan, at his office, on 24th June 2020. The key agenda of the meeting was to apprise the Honourable Minister – ex-officio Chairperson of COMSATS Consultative Committee – about COMSATS’ recent undertakings aimed at scientific and technological growth and advancement of its member states, including Pakistan.

Capt. (R) Nasim Nawaz, Secretary MoST; Dr. Hussain Abidi, Member (Science and Technology), MoST; and Dr. Ahsan Feroze,



Director (IL), Pakistan Science Foundation were also present during the meeting along with Mr. Bilal Chohan (Director of Admin & Establishment); and Mr. Farhan Ansari (Sr. Assistant Director Programmes) from COMSATS Secretariat.

After his detailed presentation, Dr. Zaidi shared with the Minister the future plans of COMSATS, which included work on:

- Establish an Innovation Lab in Islamabad;
- Develop a Distance Learning Support Network;
- Set-up 50 Rural Telehealth Clinics in Pakistan;
- Provide wireless broadband services for socio-economic development in Azad Jammu and Kashmir (AJK) region of Pakistan; and
- Establish higher education institutions in other Member States on the line of its flagship project, i.e., COMSATS University Islamabad.

It was communicated that COMSATS aspires promoting Science, Technology, Engineering and Mathematics (STEM) education in Pakistan and is already acting as a conduit between Governments of Pakistan and China for establishing an S&T Park in Jhelum, Pakistan.

Mr. Fawad recommended scaling-up of CTH within Pakistan and also expanding it to other COMSATS member states. Taking keen interest in COMSATS' Scholarship Programme, Mr. Fawad encouraged COMSATS to give priority to the underprivileged brotherly countries.

The Minister also expressed Pakistan's willingness to support other COMSATS member states to aid their response to the global outbreak of Coronavirus.

Prof. Dr. Ghazna Khalid, Honourable Member of the Parliament of Pakistan, and Member Task Force on COVID-19

Prof. Dr. Ghazna Khalid, Honourable Member of the Parliament, and Member



Task Force on COVID-19 of the Ministry of Science and Technology, Government of Pakistan, visited COMSATS Secretariat, on 6th August 2020, and met COMSATS' officials to discuss possible collaboration with COMSATS Telehealth (CTH) with regard to Pakistan's government response to COVID-19. A briefing was given to Dr. Ghazna on COMSATS' organizational structure and operations. Potential avenues of cooperation were also explored in areas of mutual interest for launching joint programmes in Pakistan as well as other COMSATS member states.

Dr. Ghazna deemed digital technologies a need of the hour as well as necessary for swift recovery from COVID-19.

Having visited the telehealth facilities at CIS Technology Park earlier, Dr. Ghazna expressed interest in initiating collaboration with CTH through setting-up telehealth service at a hospital that is being established through public private partnership in Dara Zinda, FATA region of KPK province. She also suggested conducting virtual trainings especially in the maternal and child healthcare domain through specialized simulation gadgets and softwares.

Yaran-e-Watan Initiative Team

In connection with an ongoing collaboration on digital health and ICTs, a two-member delegation of Yaran-e-Watan





initiative of Ministry of National Health Services, Regulation and Coordination (MoNHSR&C), Government of Pakistan, visited COMSATS Telehealth (CTH) Resource Centre housed in CIS Technology Park, on 30th July 2020.

Visiting on behalf of the former Prime Minister Special Assistant (SAPM) on Health, Dr. Zafar Mirza was shown around various technologies and telehealth facilities available with CTH. The delegation also held a meeting with the Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and appreciated the efforts of COMSATS in promoting the use of digital technologies in every field, especially health. Dr. Zaidi extended offer of support to Yaran-e-Watan initiative through its ISP.

Ms. Tanya Aidrus, Special Assistant to Prime Minister on Digital Pakistan Initiative

On 2nd July 2020, Ms. Tanya Aidrus, Special Assistant to Prime Minister on Digital Pakistan Initiative visited various facilities of COMSATS' flagships projects, i.e., COMSATS Internet Services (CIS) and COMATS Telehealth (CTH) housed at CIS Technology Park, Islamabad.

Ms. Aidrus was given briefing on the inception, operations and services of the two projects. It was informed that CIS is the pioneer Internet Service Provider (ISP) of Pakistan that has established a network of 19 offices across Pakistan to serve government organizations, small and medium enterprises (SMEs), and private organizations as well as marginalized communication of Pakistan. Besides, COMSATS Telehealth project, being the pioneer in the field of telemedicine in Pakistan, is providing primary healthcare facilities along with specialist consultations to rural populations of Pakistan.

During the visit, Ms. Aidrus was also introduced to various facilities, services and technologies developed by CIS including CIS Data center, software solutions, and telehealth set-up. She appreciated the services and solutions being provided by CIS and CTH across Pakistan.

Mr. Jehanzeb Khan, Deputy Chairperson Planning Commission of Pakistan

On November 9, 2020, the Deputy Chairperson Planning Commission of

Pakistan, Mr. Jehanzeb Khan, called on the Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and other officials of COMSATS at the organization's Secretariat in Islamabad. Mr. Khan was accompanied by Mr. Muhammad Sarwar Gondal, Member Planning Commission for Support Services from Pakistan Bureau of Statistics.

In this meeting, Dr. Zaidi briefed the worthy guest on COMSATS' programmes and activities that have had effective patronage of Government of Pakistan, apart from generous hosting of COMSATS Secretariat in Islamabad, since inception in 1994.

Mr. Khan emphasized on due and right use of media and good communication approaches to effectively engage all sectors of society to create useful debates and opinions on matters pertaining to general well-being and community engagement, such as climate change. He strongly advocated the use of Big Data coupled with AI for good decision and policy making. He considered it important that COMSATS should help build expertise in areas, including: precision engineering, biotechnology, and biomaterials. On a note of more future mutual cooperation, Mr. Khan considered COMSATS' advisory role important and showed interest in Planning Commission and COMSATS developing joint partnership frameworks.

Some specific suggestion made during the meeting pointed towards: better integration of databases and MIS in healthcare as parts of Decision Support Systems (DSS); creating an ICT Roadmap with public-private partnership; open and flexible policies to encourage international partners; better modeling for integrating digital health in existing health systems. He considered it especially important for ICTs and other technologies' gains to trickle down to farmers as patrons of food security, especially in agrarian societies.

ADVOCACY THROUGH PUBLICATIONS, INFORMATION DISSEMINATION AND COMMUNICATION

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ADVOCACY THROUGH PUBLICATIONS, INFORMATION DISSEMINATION AND COMMUNICATION

COMSATS' publications are an important means of outreach and advocacy for the organization, which is done through a bimonthly Newsletter, COMSATS' official website and other publications, and promotional material. From time to time, COMSATS also collaborates with different institutions to bring out joint publications on work and matters of common interest. Dissemination of important information, news and articles, electronic and social media further aides this activity throughout the year.

COMSATS Newsletter

COMSATS Newsletter is not only a means of dissemination of information on COMSATS' own undertakings, but is also an effective science advocacy and diplomacy tool. During the calendar year 2020, the last issue of the 11th volume (2019) and five issues of the 12th volume (2020) of the newsletter documented and presented the activities of COMSATS Secretariat as well as its Centres of Excellence.

Apart from the standard sections covering the activities of COMSATS Secretariat and Centres of Excellence, following reports were covered as 'Special Section': COMSATS High-Level Breakfast Meeting, Addis Ababa, Ethiopia; 23rd Meeting of COMSATS Coordinating Council (Online); and Post 23rd Coordinating Council Meeting Virtual Presentation Sessions. Furthermore, the special section in the last issue of volume 12 covered the news of 4th Meeting of COMSATS Consultative Committee that was held virtually in November 2020.

In the different issues of volume 12, comprehensive reports of the following events/webinars were covered under the section 'Highlights from COMSATS Secretariat': COMSATS-WHO-MoNHSR&C virtual trainings on Sexual, Reproductive and Maternal Health (SRH) for telemedicine providers; COMSATS-CWCDH International webinar on 'Digital Health in COVID-19: Sharing Experiences of COMSATS' South Asian Member States'; COMSATS-COMSTECH-ECOSF-PSF-PAS Seminar on World Science Day



for Peace and Development; International webinar on "Current Challenges: Imperative of South-South Cooperation"; COMSATS-CUI International Seminar on "Youth Engagement for Global Action"; webinar on "Role and Challenges of Youth in Global Crisis – COVID-19"; COMSATS-AIPS-IUCPSS Startup Founder Workshop on "How to Build Successful Team and Businesses"; COMSATS-IUCPSS-ICTD session on the ranking and quality assurance of universities; COMSATS-IUCPSS-ICTD lecture on "Ranking and Universities – Importance and Challenges"; COMSATS – IPDS roundtable dialogue on "Sino-Pak Agriculture Cooperation – Way Forward"; and COMSATS-GTTN lecture on "Belt and Road Initiative and its implications on sustainable development in Pakistan".

These events encouraged exchange of experiences, solutions and best practices for a better COVID-19 response; suggested

ways to apply youth's potential to find solution to contemporary challenges; promoted knowledge sharing, skill development and capacity-building of telehealth providers; as well as helped leverage South-South and Triangular cooperation. All of this was effectively projected in published issues of COMSATS Newsletter.

Opinion Articles included in these issues highlighted various aspects of S&T-related developments and touched on important themes of interest to the stakeholders of COMSATS. Broad themes of these articles were COVID-19 pandemic, women empowerment, digitalization, science diplomacy and cooperation for development. These articles were:

- Silencing the Guns for Peace and Development, Op-ed by Amb. (R) Fauzia Nasreen;
- Corona: Pandemic in Times of Technology and Innovation by Dr. Azeema Fareed;
- COVID-19 Crisis: An Unprecedented Push for SDGs by Ms. Huma Balouch;
- Women and SDGs: COMSATS' Perspective by Ms. Farhana Saleem;
- Dynamics of COVID-19 in the Era of 4th Industrial Revolution by Amb. (R) Fauzia Nasreen;
- COVID-19 Crisis and Developing Countries: Digital Health Perspective by Amb. (R) Fauzia Nasreen, Dr. Azeema Fareed, Ms. Huma Balouch; and
- Digitalization as a Cross-cutting Issue in UN Programmes and the Role of SSC and TrC by Amb. (R) Fauzia Nasreen.

An interview relating to COVID-19, infodemic and e-health with Dr. Najeeb Al-Shorbaji, President, Jordan Library and Information Association, and Former Director Knowledge, Ethics and Research, World Health Organization (WHO) Headquarters, Switzerland, was also published in newsletter for the awareness and education of the wider audience.

Science Diplomacy aspect of the information covered in the newsletter majorly comes from 'Development and S&T News from Member States and Beyond'. The section aims to highlight important scientific and technological advancements from across the globe that have the potential to help ameliorate the development process, especially in the countries of the South. The issues published during the reporting period covered R&D from COMSATS Member States relating to renewable energy, food security, climate action, effective waste management, ICTs, as well as sustainable and good practices. Furthermore, they also projected COVID-19 related developments, including efforts for vaccine development, therapeutic drug design, and development of novel and AI-based diagnostic tools for coronavirus detection.

The Newsletter was widely distributed to all the member countries, COMSATS' Centres of Excellence and other related organizations, mainly through electronic means. Present and past issues of COMSATS Newsletter are available for viewing and downloading at the following URL: http://comsats.org/?page_id=150.

Print, Electronic and Social Media

As per practice, COMSATS' official website was kept updated with information on various undertakings and related aspects of the organization. The information made available on the website included: announcements, news and reports of all major happenings of the organization; new and updated information material; and updated contact information of members of major organs of COMSATS.



The PDF versions of all the publications of COMSATS, including the Newsletters, Annual Reports, updated Brochure, updated Flyer, and other information material were made available on the website for easier access.

As part of its advocacy of science and development issues, COMSATS engages with the local print media by means of important messages and information on the organization. Major events having COMSATS' participation included: 94th Birth Anniversary of Prof. Dr. Abdus Salam (Jan 29); International Women's day (March 08); 73rd Independence Day of Pakistan (August 14); 69 years of Pakistan – China diplomatic relations (May 20); and 70th Anniversary of People's Republic of China (October 01). Advertisements and relevant articles in these issues helped create awareness on the days' themes as well as on the mandate and scope of the organization. COMSATS also published a number of articles in news journals featuring its various projects and initiatives and highlighting development-related

issues in the Global South, as well as contemporary issues and challenges.

COMSATS' officials also remained engaged with news channels and electronic media to help advocate the organization's objectives that are centered upon the principles of scientific collaboration, inclusion, and sustainability in every aspect. During these engagements, COMSATS' new initiatives and recent developments regarding the on-going programmes, including COMSATS telehealth were shared with the wider audience.

Furthermore, COMSATS also effectively utilized its social media platforms – Twitter (COMSATS_en), Facebook (COMSATSofficial), LinkedIn (company/comsats), and Instagram (comsats_en) – to expand outreach; showcase organization's programmes and ongoing activities; broadcast information about various scientific developments from COMSATS Centres of Excellence and Member States; sharing success stories,



best practices and scientific breakthroughs from across the globe; as well as ideas and policy foresight on pertinent development issues, such as Sustainable Development Goals (SDGs), sustainable development, corona, and South-South Cooperation. Information about various scholarships and sponsorships programmes available with COMSATS' Network and elsewhere for the countries of the South have also been broadcasted through these channels. COMSATS' also continued its advocacy of SDGs through social media, in particular during the 5th Anniversary month of 2030 Global Agenda (September 2020).

COMSATS' activities were also promoted on the social media channels of South-South Galaxy and UNOSSC as part of latter's 'Partner of the Month' campaign. This was done by highlighting the organization's vision, mission and objectives, good practices on South-South and Triangular cooperation, aided by visual material, information on key partners, and publications.

COVID-19 Awareness

A devoted web-page "CORONA and Sustainable Development" (http://comsats.org/?page_id=6712) was developed by COMSATS to serve as a repository of information on the pandemic with respect to elements and entities relevant to COMSATS as well as to showcase the relevant strength and developments at COMSATS' Centres of Excellence and the rest of the world. The page includes articles and opinion from COMSATS' officials, interview(s) from relevant expert(s), and thematic articles from other sources. A look at the pandemic from sustainable development perspective has also been included among other things. Besides, a prominent feature of the page is the projection of scientific developments relating to COVID-19 pandemic in COMSATS Member States and Centres of Excellence. Information sharing and advocacy through social media regarding COVID-19 also remained a prominent feature of COMSATS' activities that were relatively diluted during the periods of

lockdown.

Furthermore, COMSATS continued to make intellectual contributions with regard to different aspects of the pandemic through various means, which includes a policy paper for South Centre, articles in COMSATS Newsletter and daily newspapers of Pakistan, and social media. Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and COMSATS Telehealth officials also remained engaged with news channels and electronic media to advocate good practices and pass on relevant knowledge, including distance education, right applications of virtual platform for provision of basic amenities, and telemedicine. Some articles in this vein are as follows:

- 'COVID-19 Crisis and Developing Countries: Digital Health Perspective' by Amb. (R) Fauzia Nasreen, Dr. Azeema Fareed, Ms. Huma Balouch.
- 'Dynamics of COVID-19 in the Era of 4th Industrial Revolution' by Amb (R) Fauzia Nasreen.

- 'COVID-19 Crisis: An Unprecedented Push for SDGs' by Ms. Huma Balouch.
- 'Corona: Pandemic in Times of Technology and Innovation' by Dr. Azeema Fareed.

Rising to the communication challenges and needs related to COVID-19 pandemic during 2020, efforts were made to present views from relevant experts. In this vein, a special interview on COVID-19, infodemic and e-health with Dr. Najeeb Al-Shorbaji, President, Jordan Library and Information Association, and Former Director Knowledge, Ethics and Research, World Health Organization (WHO) Headquarters, Switzerland, was published during the reporting period. The interview covered the various dynamics of applications and use of digital technologies with respect to the pandemic, infodemic on coronavirus, good communication

strategy, foresight on public health measures, and digital health.

During the reporting period, COMSATS social media platforms were in particular utilized, inter alia, for projecting COVID-19 related developments at institutional and government level globally, and in COMSATS' member states, whereby they served as an effective means to highlight COMSATS' efforts in this respect.

Impact and Objectives Achieved

- Effective information sharing with and sensitization of Member States, associated Network and other stakeholders on activities of COMSATS in line with its mandate.
- Diplomacy and advocacy of key issues

relating to S&T within COMSATS' fraternity and internationally, establishing the importance of its integration in development process.

- Improved networking by highlighting collaboration potentials and opportunities, and better outreach and visibility for Member States and institutions at important fora and quarters.
- Improving COMSATS' image as an important contributor to the global narrative on S&T-led development, key and arising development challenges and sustainable development goals. Through information exchange and relevant collaborations, COMSATS' recognition in this regard has considerably improved during recent years.


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COMSATS: South-South Cooperation Partner of the Month

About COMSATS

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) was established in 1994 as a realization of an ambitious plan envisaged by the Nobel Laureate from Pakistan, Prof. Dr. Abdus Salam. The plan was to support and catalyze the socio-economic uplift of the developing countries by promoting and inculcating S&T as an effective means of development. As the name suggests, the foundation of the organization has three major dimensions: Sustainable Development, Science and Technology



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Financial Affairs

The major source of financing operations of COMSATS Secretariat is annual contribution of the Government of Pakistan towards running cost of COMSATS Secretariat. The other member states of COMSATS pay Annual Membership Contribution (AMC) towards COMSATS on voluntary basis. The AMC received from member states is kept as 'Trust Money' and is spent on activities related to the respective country. In order to have a regular source of financing technical programmes, COMSATS Secretariat created an Endowment Fund of US\$ 10.00 million in the 2nd General Meeting of COMSATS, held on 16-17 April 2012, in Islamabad, Pakistan.

Host Country Contribution

The major source of finances for operations of COMSATS Secretariat is annual contribution of the Government of Pakistan being made since the inception of the organization and is being hosted by the country as a statutory decision. In addition, the Government of Pakistan is also paying Annual Membership Contribution (AMC) towards COMSATS on regular basis.

Annual Membership Contribution (AMC)

The member states of COMSATS are paying Annual Membership Contribution (AMC) towards COMSATS on voluntary basis. The AMC received from member states of COMSATS is kept as "Trust Money" and it is utilized to support technical activities and programmes of the contributing member state. During the reporting period (January to December 2020), COMSATS received AMC from China, Kazakhstan, Nigeria and Pakistan.

COMSATS Endowment Fund

In order to strengthen the financial health of COMSATS and to have a more sustained financial support for technical activities of COMSATS, an endowment fund of worth US\$ 10.00 million was created during the 2nd General Meeting of COMSATS held on 16-17 April 2012, in Islamabad, Pakistan by the then Prime Minister of Islamic Republic of Pakistan, in his capacity as the Chairperson of COMSATS. During this meeting, the Government of Pakistan pledged seed money of US\$ 1.00 million (Rs. 100 million) as its contribution towards the fund and representatives of other member states also made pledges to contribute towards COMSATS Endowment Fund. The Government of Pakistan has contributed Rs. 10.00 million towards the fund against its total commitment of Rs. 100 million (US\$ 1.00 million). Efforts continue to build the Fund to its proposed level.

Accounts and Audit

The accounts of COMSATS Secretariat are managed and maintained 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 submitted to COMSATS Management Committee for endorsement and the Coordinating Council for approval.

The financial statements on accounts of COMSATS Secretariat for the financial year ended on June 30, 2019, audited by M/s HLB IJAZ TABUSSUM & Co., Chartered Accountants, have been approved by the Coordinating Council of COMSATS in its 23rd (Online) Meeting, held on 14 July 2020. The accounts for the financial year ended on June 30, 2020, have also been audited by M/s HLB IJAZ TABUSSUM & Co., Chartered Accountants.

The auditors' report and audited financial statements for the year 2020 will be submitted to the Coordinating Council of COMSATS for approval in its next meeting expected to be held in March 2021.

LIST OF FOCAL POINTS IN COMSATS' MEMBER STATES

Hon. Architect Yafesh Osman

Minister
Ministry of Science and Technology
People's Republic of Bangladesh

H.E. Mr. Wang Zhigang

Minister
Ministry of Science and Technology
People's Republic of China

H.E. Dr. Mabel Gisela Torres

Minister
Ministry of Science, Technology and Innovation
Republic of Colombia

Prof. Dr. Mahmoud M. Sakr

President
Academy of Scientific Research and Technology
Arab Republic of Egypt

H.E. Dr. Badara Joof

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

H.E. Dr. Kwaku Afriyie

Minister
Ministry of Environment, Science, Technology and Innovation
Republic of Ghana

H.E. Dr Mansour Gholami

Minister
Ministry of Science, Research and Technology
Islamic Republic of Iran

Hon. Daryl Vaz

Minister
Ministry of Science, Energy and Technology
Jamaica, West Indies

Hon. Dr. Dia-Eddin Arafah

Secretary General
Higher Council for Science and Technology (HCST)
Hashemite Kingdom of Jordan

H.E. Mr. Askhat Aymagambetov

Minister
Ministry of Education and Science
Republic of Kazakhstan

H.E Mr. Jang Chol

President
State Academy of Sciences
Democratic People's Republic of Korea

H.E. Prof. Saaïd Amzazi

Minister
Ministry of National Education, Vocational Training, Higher Education and Scientific Research
Kingdom of Morocco

Hon. Dr Ogbonnaya Onu

Minister
Federal Ministry of Science & Technology
Federal Republic of Nigeria

Hon. Chaudhry Fawad Hussain

Minister
Ministry of Science & Technology
Islamic Republic of Pakistan

H.E. Prof. Mahmoud Abu Mowais

Minister
Ministry of Higher Education and Scientific Research
The State of Palestine

Hon. Fortunato T. De La Peña

Secretary
Department of Science and Technology
Republic of the Philippines

Hon. Dr. Cheikh Oumar Anne

Minister

Ministère de l'Enseignement Supérieur
Republic of Senegal

Hon Eng. Abdullahi Abukar Haji

Minister

Ministry of Education, Culture and Higher Education
Federal Republic of Somalia

Hon. Prof. G.L. Peiris

Minister

Ministry of Education
Democratic Socialist Republic of Sri Lanka

H.E. Dr. Intisar Sigheiroun Alezein (Ms.)

Minister

Ministry of Higher Education and Scientific Research
Republic of the Sudan

Prof. Dr. Bassam Ibrahim

Minister

Ministry of Higher Education
Syrian Arab Republic

Hon. Prof. Joyce Ndalichako

Minister

Ministry of Education, Science & Technology
The United Republic of Tanzania

H.E. Prof. Olfa Benouda Sioud

Minister

Ministry of Higher Education and Scientific Research
Republic of Tunisia

Prof. Dr. Hasan Mandal

President

The Scientific and Technological Research Council of
Turkey (TUBITAK)
Republic of Turkey

Dr. Peter Ibale Ndemere

Executive Secretary

Uganda National Council for Science & Technology
(UNCST)
Republic of Uganda

Hon. Prof Dr. Khalid Ahmed Alwosabi

Minister

Ministry of Higher Education and Scientific Research
Republic of Yemen

Hon. Prof Dr. Amon Murwira

Minister

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



COMSATS' Centres of Excellence



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