



MID YEAR REPORT

(January - June 2017)



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

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Foreword

The quests of humanity cannot be completed without cooperation at all levels. COMSATS has a mandate to seek and foster cooperation in Science and Technology among the countries of the South for sustainable development for attaining its mission 'to help create a world where all nations are at peace with one another and capable of providing a good quality of life to their populations in a sustainable way...'. In this regard, COMSATS is devoted to bringing together more countries and scientific institutions by expanding its state and network membership; and

enhancing the quality and scope of its programmes. To achieve the organization's objectives, COMSATS also seeks cooperation from organizations with similar mandate. Despite the immense challenges it faces in pursuit of its mission, the organization is preparing for new paradigms and better destinations, which calls for more dynamism and re-alignment of strategies.

The report is a special effort for immediate information sharing to the stakeholders. The efforts of COMSATS made during the first half of 2017 forms its basis. These include engaging with different foreign and diplomatic missions, including those from member and non-member states, mobilizing necessary intellectual resources, COMSATS

20th Coordinating Council Meeting, collaborative efforts between affiliated institutions, and reports from some Centres of Excellence. Also featured are the intellectual exchanges with officials from the host country, Pakistan.

I take this opportunity to thank all the stakeholders of COMSATS, for their financial, intellectual, technical and in-kind contributions that have been vital for COMSATS growth and impact. My personal gratitude to all whose support I enjoy while fulfilling the responsibilities as the Executive Director COMSATS.

Dr. S. M. Junaid Zaidi
Executive Director COMSATS



COMSATS



Change in Leadership

Appointment of the New Executive Director

Dr. S. M. Junaid Zaidi assumed the charge of the Executive Director, COMSATS Secretariat, on 27th February 2017. Dr. Zaidi succeeded Mr. Fazal Abbas Maken, the Federal Secretary, Ministry of Science and Technology (MoST), Government of Pakistan, who held the interim charge of the position for three months since 19th October 2016.

Previously, Dr. Zaidi also held the interim charge as the Executive Director in 2000.

Dr. Zaidi is best known for his over two decades of association with COMSATS Institute of Information Technology (CIIT). He has been the founding rector of the degree-awarding institution till early 2017. Based on the phenomenal growth the university has undergone during the years, his reputation as an academican proceeds him. In recognition of his services to the education and I.T sectors, Dr. Zaidi



has been awarded two Civil Awards by the Government of Pakistan, namely *Sitara-i-Imtiaz* and *Hilal-i-Imtiaz*.

The New Executive Director COMSATS honoured by Focal Ministry

On March 15th, 2017, the Federal Minister for Science and Technology, Government of Pakistan, H.E. Rana Tanveer Hussain, hosted a dinner to introduce the newly appointed Executive Director COMSATS to the diplomatic community of COMSATS Member States, and a few non-

members in Islamabad, as well as senior government functionaries of Pakistan.

The dinner had an impressive attendance of 75, including ambassadors and representatives from 22 foreign missions in Islamabad. The foreign missions present on the occasion represented Afghanistan, Azerbaijan, Bangladesh, Brunei, China, Egypt, Iran, Kazakhstan, Mauritius, Morocco, Nigeria, Oman, Palestine, Sri Lanka, Sudan, Syria, Tajikistan, Thailand, Tunisia, Turkey, Turkmenistan, and Uzbekistan. Senior officials, inter alia, from Pakistani Ministries of S&T, Foreign Affairs, and Planning and Development; COMSATS Secretariat, COMSATS Institute of Information Technology, and COMSATS Internet Services also attended the dinner.

Speaking to the august gathering at the dinner, His Excellency congratulated Dr. S.M. Junaid Zaidi on assuming charge as Executive Director COMSATS, which he deemed “a befitting recognition of Dr.





Present and Former Executive Directors of COMSATS with COMSATS' Officials

Zaidi's dedicated and selfless services spanning well over 45 years". Earlier, the Federal Secretary, Ministry of Science and Technology, Mr. Fazal Abbas Maken, appreciated the mandate of COMSATS and its efforts in pursuit of its objectives over the years. He showed his confidence in the new incumbent, who took on the new role equipped with a sound academic background and a vast experience of civil service, education sector, S&T policy and diplomacy.

In his remarks on the occasion, the Executive Director COMSATS expressed his gratitude to the Minister for honoring him by hosting the dinner. He was grateful to the Prime Minister for appointing him as the Executive Director, and expressed gratitude to the Federal Minister and Federal Secretary, Ministry of Science and Technology, for the confidence they showed in him. He held in high



Former Minister for Science and Technology, Government of Pakistan, Mr. Rana Tanveer Husain addressing the diplomatic community in Pakistan at a Welcome Dinner for the New Executive Director COMSATS

regard, the efforts of his predecessors. With a pledge to do his utmost best in realizing the vision of Dr. Abdus Salam of a more enabled South in terms of S&T cooperation, he sought support from his colleagues and the honorable guests at the dinner. In his vote of thanks after the dinner, Mr. Rana

Tanveer considered the support of the foreign missions in the country crucial for COMSATS' smooth operations. He reiterated his Ministry's strong resolve to stand by COMSATS to help achieve its goals.

International Collaborations

20th Coordinating Council Meeting, 14-15 May 2017, Cairo, Egypt

With South-South cooperation at the core of the whole operational strategy, COMSATS Coordinating Council serves as an effective forum for important deliberations for scientific and technical cooperation.

The 20th meeting of the Council took place on 14th and 15th May 2017 at National Research Centre (NRC), Egypt.

Preparations

Earlier on, COMSATS Headquarters closely coordinated with the local organizing committee of the event to ensure timely arrangements. The host institution, NRC-Egypt, extended invitations to the confirmed participants of the meeting for visa formalities, whereas visa-on-arrival was arranged for those participants who do not have Egyptian Embassy

in their respective countries. The Working Paper of the meeting, including the annotated Agenda and Programme and COMSATS' Annual Activity Report (2016-17), was prepared and was electronically distributed to the Council members and other invitees during April 2017. The printing and publicity material of the event was also prepared by COMSATS and the host Centre. Arrangements were made for the interviews of delegates to publicize COMSATS' mission of South-South cooperation for achieving science-led sustainable development in the developing countries.

The Meeting

The Meeting was attended by the Council members or their representatives from 14 Centres of Excellence of COMSATS: BCSIR-Bangladesh, ICCES-China, NRC-Egypt, CSIR-Ghana, KazNU-Kazakhstan, NMC-Nigeria, ICCBS-Pakistan, CIIT-Pakistan, ITI-Sri

Lanka, IRCC-Sudan, UCAD-Senegal, TIRDO-Tanzania, CERTE-Tunisia and TUBITAK MAM-Turkey, as well as the honorary life time member of the Council, Prof. M.H.A. Hassan, Executive Director TWAS. The representative of UNESCO also attended the meeting as observer. Moreover, the meeting was attended by a two-member delegation of the Al-Quds University (Palestine) led by its President, in connection with the university's request for induction in COMSATS' Network of International S&T Centres of Excellence.

Inauguration

The meeting was inaugurated on 14th May 2017, by Senior Assistant Minister for Strategic Plans and Supporting Systems, Ministry of Higher Education and Scientific Research, Arab Republic of Egypt. In addition to the senior officials of NRC and COMSATS, the ceremony was attended by the senior officials of the diplomatic missions of Jordan,



From L to R: Dr. S. M. Junaid Zaidi, Secretary COMSATS Coordinating Council; Prof. Dr. Ashraf Shaalan, Chairperson COMSATS Coordinating Council; H.E. Prof. Khaled Kassem, Senior Assistant Minister for Strategic Plans and Supporting Systems, Ministry of Higher Education and Scientific Research, Egypt; and Prof. Mahmoud Sakr, President of the Academy of Scientific Research and Technology (ASRT), Egypt



COMSATS is an effective platform for facilitating networking and scientific collaborations among the developing countries.

*H.E. Prof. Khaled Kassem,
Senior Assistant Minister for
Strategic Plans and Supporting
Systems, Ministry of Higher
Education and Scientific Research,
Egypt*



Our global competitiveness depends on our ability to create, develop and make practical use of new scientific discoveries. In brief: our capacity to innovate... innovation is at the heart of our ability to find solutions that are economically, socially, and environmentally sustainable.

*Prof. Dr. Ashraf Shaalan,
Chairperson
COMSATS Coordinating Council*



Adequate investment for capacity building of scientific human resources is of paramount importance. The developing countries must also pay attention to devising effective national policies and action plans for development of adequate infrastructure and facilities for productive research and development.

*Dr. S. M. Junaid Zaidi
Executive Director COMSATS*

Pakistan and Kazakhstan in Cairo; as well as universities, R&D institutions, ministries and government departments of the country.

In his inaugural address, H.E.

Prof. Khaled Kassem considered COMSATS an effective platform for facilitating the networking and scientific collaborations among the developing countries. He stressed the need of determining research

priorities and strategizing accordingly in order to fulfill their needs of national development. Appreciating the ongoing programmes and activities of COMSATS, he urged the organization to continue providing

opportunities of exchange of human and technological resources among the developing countries. Prof. Kassem also updated the participants regarding the ongoing activities of his Ministry.

Speaking at the inauguration, Prof. Dr. Ashraf Shaalan, President NRC, Egypt, Chairperson COMSATS Coordinating Council, welcomed the participants and congratulated Dr. S. M. Junaid Zaidi on his appointment as the Executive Director COMSATS. He expressed pleasure on hosting this year's Council meeting, which made NRC the only Centre of Excellence to have hosted three Council meetings.

Speaking on the occasion, Dr. Zaidi expressed gratitude towards the National Research Centre for generous hospitality and excellent arrangements for the meeting. He opined that science and technology is the most effective tool to improve the socio-economic conditions in the developing countries. Developing countries must pay attention to devising effective national policies and action plans for development of adequate infrastructure and facilities for productive research and development. He also announced the Turkish Parliament's endorsement of the ratification of the Accession Agreement to join COMSATS, which was earlier signed by the honourable Ambassador of Turkey to Pakistan. He wished the delegates fruitful discussions during the meeting and an enjoyable stay in Cairo.

Speaking on the occasion, Prof. Mahmoud Sakr, President of the Academy of Scientific Research and Technology (ASRT), Egypt, stated that COMSATS is an excellent platform for internationalization of research efforts being made by Member States/Centres of Excellence. He expressed interest in having collaborations between ASRT and COMSATS in capacity-building and joint research projects.

Technical Deliberations

The technical sessions of the two-day meeting were chaired by Prof. Shaalan. The meeting deliberated on a 13-point agenda.

The deliberations, inter alia, featured:

- Presentation of COMSATS' Annual Activity Report (May 2016 – April 2017) by Advisor (Programmes)
- COMSATS Future plans of the organization presented by the Executive Director COMSATS
- Presentations on the scientific activities of respective Centres during the period since the last Council meeting by the heads/representatives of the Centres of Excellence.

The Council expressed satisfaction on the annual activity report for the period since the 19th Meeting, future plans, and administrative and financial affairs of COMSATS. The presentations by the council members helped in identifying areas of potential cooperation among the Council members.

Major Outcomes of the Council Meeting

- *Induction of Al-Quds University, Palestine:* The Al-Quds University, Palestine, (Brief Profile on Page 53-54) was inducted in COMSATS' Network of Centres of Excellence as its 21st member, through a unanimous approval. The approval was accorded based on the formal application received from the university as well as the detailed presentation by the President of the university.
- *Offer of Post Doctoral Scholarships:* ICCBS-Pakistan and CIIT-Pakistan, offered 10 post-doctoral fellowships each, while NRC-Egypt offered 5 fellowships to COMSATS Member States.
- *Reconstitution of Technical Advisory Committee:* The matter of reconstitution of COMSATS' Technical Advisory Committee (TAC) was deliberated upon with a decision that submitted nominations from the Centres would be discussed. Subsequent consultations among the Chairperson Coordinating Council, Executive Director

Scholarships offered by COMSATS' Centres of Excellence

Students from COMSATS' Member States are welcome to benefit from the following offers from COMSATS Centres of Excellence:

- Hundred scholarships for students/researchers for postgraduate studies and 10 scholarships for post-doctoral fellowships at all campuses of COMSATS Institute of Information Technology (CIIT), Pakistan.
- Seven Ph.D scholarships [4 fully paid and 3 partially paid (50%)] and five postdoctoral fellowships at the Iranian Research Organization for Science and Technology (IROST), Iran.
- Ten doctoral scholarships/post-doctoral fellowships at the International Center for Chemical and Biological Science (ICCBS), Pakistan.
- Five post-doctoral fellowships at the National Research Centre (NRC), Egypt, and International Centre for Climate and Environment Sciences (ICCES), China, each.
- One post-doctoral fellowship at Bangladesh Council for Scientific and Industrial Research (BCSIR), Bangladesh.

Contact for more information:

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TWAS, and Executive Director COMSATS, led to the constitution of a new TAC, members to which are shown on the next page.

During another agenda-item, progress reports of the International Thematic Research Groups

(ITRGs) on 'Climate Change and Environmental Protection', 'Information and Communication Technologies', 'Natural Products Sciences', 'Mathematical Modeling', and 'Agriculture, Food Security and Biotechnology' were presented to the Council by the Group Leaders/

representatives of the Lead Centres. Discussions regarding the new initiatives for collaboration and way forward led to an agreement that COMSATS' ministerial Consultative Committee shall be activated to hold regular meetings at appropriate level, and their agenda shall be prepared in consultation with the Coordinating Council.

Members of the New Technical Advisory Committee

- Dr. Sabah AlMomin, Research Scientist, Biotechnology Program, Kuwait Institute for Scientific Research (KISR), Safat, Kuwait.
- Prof. Dr. Huadong Guo, Director General, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing, China.
- Dr. Sok Ching Cheong, Cancer Research Initiatives Foundation (CARIF), Selangor, Malaysia.
- Dr. Jalila Ben Salah-Abbas, Higher Institute of Biotechnology of Monastir, Monastir, Tunisia.
- Dr. Yin Li, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China
- Prof. Mustafa Omar Nawari, Professor of Dynamical and Information Systems, University of Khartoum, Khartoum, Sudan
- Prof. Talgat Inerbaev, Research Fellow, National University of Science and Technology (MISIS), Moscow, Russia
- Prof. Sahalu B. Junaidu, Department of Computer Science, Ahmadu Bello University, Zaria, Nigeria.
- Dr. Amal Al-Aboudi, Department of Chemistry, University of Jordan, Amman, Jordan

It was recommended that following the success of the establishment of CIIT-Pakistan, COMSATS may establish a few new Centres of Excellence in Member States. The Centres of Excellence were urged to enhance networking with each other and share their human and technological resources for the benefit of Member States. It was agreed that opportunities of fellowships available with TWAS shall be examined and availed by the Centres of Excellence.

Meeting Communiqué

The Coordinating Council expressed satisfaction on the annual



activity report, future plans, and administrative and financial affairs of COMSATS. The meeting also issued a Communiqué that encourages the Centres of Excellence to:

- enhance cooperation with other Network members for launching new projects and programmes for the benefit of Member States;
- become creators of knowledge in addition to being users of the same;
- launch the remaining two ITRGs on 'Materials Science' and 'Construction Materials', and arrange funds for the activities of existing ITRGs from their respective governments;
- sensitize their respective governments regarding the benefits of regularly making AMC for the financial sustainability of COMSATS;
- keep COMSATS Headquarters aware of new developments and major achievements of their organizations; and
- contribute scientific articles for publication in COMSATS' bi-annual journal, 'Science Vision'.

The meeting appreciated the efforts of COMSATS Secretariat in fulfilling the objectives of the organization. The Coordinating Council also welcomed Dr. S. M. Junaid Zaidi as the new Executive Director of COMSATS and hoped that under his leadership the programmes of COMSATS will be further enhanced in order to achieve the objectives of the organization. The Council also expressed gratitude to all of the previous Executive Directors

List of Participants of the 20th Coordinating Council Meeting, Cairo, Egypt

- Prof. Dr. Ashraf Shaalan, National Research Centre (NRC), Egypt (Chairperson)
- Dr. S. M. Junaid Zaidi, Executive Director COMSATS (Secretary to the Council)
- Dr. Md. Sarwar Jahan, Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- Prof. Lin Zhaohui, International Center for Climate and Environment Sciences (ICCES), China
- Ms. Wencheng Chen, International Center for Climate and Environment Sciences (ICCES), China
- Prof. Hosam El-Sayed, National Research Centre, Egypt
- Prof. Dr. Victor Kwame Agyeman, Council for Scientific and Industrial Research (CSIR), Ghana
- Dr. Eugene Atiemo, Council for Scientific and Industrial Research, Ghana
- Prof. Tlekkabul Ramazanov, Al-Farabi Kazakh National University (KazNU), Kazakhstan
- Prof. Ejugwu Stephen Onah, National Mathematical Centre (NMC), Nigeria
- Prof. Dr. M. Iqbal Choudhary, International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Prof. Dr. Farzana Shaheen, International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Prof. Dr. Raheel Qamar, COMSATS Institute of Information Technology (CIIT), Pakistan.
- Prof. Izhar Hussain, COMSATS Institute of Information Technology (CIIT), Pakistan
- Prof. Dr. Imad F. S. Abukishek, Al-Quds University, Palestine
- Prof. Dr. Radwan F. H. Qasrawi, Al-Quds University, Palestine
- Dr. Sirimal Premakumara Galbada Arachchige, Industrial Technology Institute, Sri Lanka
- Dr. Einas Elmughira Hamad Mohamed, Industrial Research & Consultancy Center (IRCC), Sudan
- Prof. Ibrahima THIOUB, University Cheikh Anta Diop of Dakar (UCAD), Senegal
- Prof. Mkumbukwa Madundo Angelo Mtambo, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania
- Mr. Mohamed Ben Amor, Water Researches and Technologies Centre of Borj-Cedria (CERTe), Tunisia
- Dr. Orkun Hasekioglu, TUBITAK Marmara Research Centre (MAM), Turkey
- Prof. Dr. Mohamed H. A. Hassan, The World Academy of Sciences (TWAS), Italy
- Mr. Nazar Hassan, UNESCO Office, Egypt
- Mr. Tajammul Hussain, COMSATS Secretariat, Pakistan
- Mr. Amanullah Khattak, COMSATS Secretariat, Pakistan
- Mr. Farhan Ansari, COMSATS Secretariat, Pakistan



of COMSATS for their sincere efforts and contributions towards fostering the programmes of the organization.

Conclusion

During the closing ceremony of the meeting held on the evening of 15th May 2017, the Executive Director COMSATS hoped that the decisions of the meeting shall be actively followed-up by the concerned Centres of Excellence for enhancing meaningful collaborations within the Network.

In his vote of thanks, the President NRC thanked the foreign delegates for ensuring their participation in the meeting. He also thanked the local organizing committee members for

their tireless efforts for organizing the meeting.

Finalization of ISESCO-COMSATS Cooperation Programme

Since 2004, COMSATS and ISESCO have been collaborating for execution of various activities in different fields of science and technology. These collaborative activities have proved to be productive for both of the organizations and have contributed to the socio-economic development of their common member countries. The collaboration is reviewed and revived through periodic agreements between the two organizations.

During Jan-Feb 2017, COMSATS and ISESCO made consultations in order to finalize the cooperation programme for 2017. In this regard, the five capacity building events were scheduled to be jointly organized by COMSATS and ISESCO during 2017, in Nigeria, Gambia, Kazakhstan, and Pakistan. These events have a focus on the themes related to ICTs, Biotechnology, Internet/ Cyber Security, Vaccine, and Repair and Maintenance of Laboratory Equipment.

A joint Conference on Agriculture, Food Security and Biotechnology was held later in April 2017 (Page 29).

Engagements with Diplomats, Government Officials, and Delegates in/from Member States



Meeting with Senior Officials in Ghana

A three-member delegation of COMSATS, headed by Ambassador Fauzia Nasreen, Advisor to Executive Director in International Relations, visited Accra, Ghana from 21st to 24th May 2017. The purpose of the visit was to strengthen relations with the country hosting the Chair of COMSATS through interactions with its partner institutions. In this regard, meetings were held at COMSATS' focal ministry in Ghana, Ministry for Environment, Science, Technology and Innovation (MESTI) and Ghanaian Centre of Excellence, the Council for Scientific and Industrial Research (CSIR). Dr. Fauzia was accompanied by two other officials of COMSATS, Mr. Nisar Ahmad, and Mr. Basit Rehman.

The delegation visited CSIR on 22nd and 24th May 2017 and held detailed meetings with the Centre's Director General, Dr. Victor Agyeman. Discussions were held with Dr.

Agyeman on scientific activities that COMSATS intends to hold in collaboration with CSIR in the near future. Moreover, the issues raised in previous interactions, correspondence and discussions held in the past were also followed up.

On May 23rd, the delegation visited MESTI to call on Prof. Kwabena Frimpong Baoteng, Hon. Minister for Environment, Science, Technology and Innovation (MESTI) in his office. The Minister was apprised about the activities of COMSATS chaired by the Ghanaian President, and its future plans.

In view of the importance of interaction at the highest level of Ghana and COMSATS for achieving the organization's objectives and fulfilling its international obligations, the likelihood of arrangement of a meeting between the Chairperson of COMSATS, the Hon. President of Ghana, Hon. Nana Addo Dankwa Akufo-Addo, and the Executive Director COMSATS was discussed.

On the same date, the delegation also met the Chief Director of the Ministry of Foreign Affairs, Dr. Yankey in order to brief him about COMSATS and its multi-layer relationship with Ghana. The meeting was held in view of the important role of the foreign office in the international affairs of the country, including the country's engagements with COMSATS' Member States.

The delegation also visited other institutions in Ghana, including the Water Research Institute, Food Research Organization, Policy Research Institute, and Ghana Atomic Energy Commission in order to get better insights into Ghana's scientific and research infrastructure.

The meetings of the delegation in Ghana helped to sensitize the Ghanaian institutions and senior officials about COMSATS and the country's role in the organization's programmes and leadership.



Meeting with the Ambassador of State of Palestine in Islamabad

His Excellency Walid Abu Ali, Ambassador of State of Palestine to Pakistan, visited COMSATS Secretariat along with the Embassy's Cultural Attaché Mr. Husni Muhammad Mustafa, on Monday, 27th March 2017. The visit was a courtesy call to extend the Palestinian Embassy's best wishes to the newly appointed Executive Director COMSATS, Dr. S.M. Junaid Zaidi. His Excellency was shown around the Secretariat building, where he was also introduced to the foreign students studying at CIIT and working as interns at COMSATS Secretariat.

Speaking on the occasion, the Ambassador pledged his Embassy's full support to COMSATS Secretariat. He further informed about his close contacts with the Federal Minister for Science and Technology and Federal Minister of State for Education, Pakistan, to seek relevant opportunities for cooperation between the two countries. He further expressed his desire to send Palestinian students in Pakistan for Post-graduate and Undergraduate studies on scholarships.

The Executive Director COMSATS welcomed the idea and said that COMSATS is ready to accommodate more than 100 students in programmes being offered by CIIT. He further explained that Palestinian students availing the scholarships would only have to bear the travel and food expenses, while their lodging in Pakistan and tuition fees will be covered by CIIT. His Excellency and Executive Director also agreed to seek financial support from Islamic Development Bank (IDB), Jeddah, to facilitate more students from Palestine in higher education institutions of Pakistan.

Meeting with the Ambassador of Syria in Islamabad

His Excellency Mr. Radwan Loutfi,

Ambassador of the Syrian Arab Republic to Pakistan, paid a visit to the COMSATS Secretariat on Monday, 3rd April 2017, to congratulate Dr. S. M. Junaid Zaidi on his appointment as Executive Director COMSATS.

The Ambassador congratulated Dr. Zaidi on assuming charge as the new incumbent and expressed confidence in his leadership that would help COMSATS in achieving its goals. He committed that Syria being a Member State of COMSATS will render all possible support to COMSATS. His Excellency apprised the Executive Director about the prevailing situation of his country with a hope for better future. With regard to the education sector of Syria, Mr. Loutfi informed that all the educational institutions are functional and the country is doing



well in higher education despite its prevalent situation. The Ambassador showed keen interest in securing some scholarships being offered by COMSATS Institute of Information Technology (CIIT) for Syrian students.

Dr. Zaidi welcomed the idea and noted COMSATS' readiness to help accommodate Syrian students in undergraduate and post-graduate studies at CIIT. He further explained that students from Syria can apply anytime throughout the year, and CIIT will process their applications at the time of admission. He stressed upon the need for more intellectual exchange among Syria, Pakistan and other COMSATS' member countries. He further explained that researchers, scholars and scientists should travel from Syria to other countries for exchange of knowledge and expertise.

Meeting with COMSATS' Liaison Officer from TUBITAK MAM, Turkey

On May 29, 2017, the Vice President of TUBITAK Marmara Research Centre (MAM), Dr. Murat MAKARACI, visited COMSATS Headquarters, Islamabad, and discussed avenues for strengthening cooperation between COMSATS and MAM. Dr. Murat was on his visit to Pakistan in connection with the then ongoing joint Reverse Linkage Project between the Pakistan Meteorological Department and Marmara Research Centre (MAM). Senior officials of COMSATS, including Advisor (Programmes), Mr. Tajammul Hussain; Deputy Director (Systems), Mr. Nisar Ahmed; and Sr. Assistant Directors, Mr. Farhan Ansari, and Ms. Huma Balouch, were present in the meeting.

During the meeting, the two sides discussed ways to enhance cooperation between COMSATS and TUBITAK MAM in the areas of



common interest, particularly in the field of Cyber Security.

Dr. Murat apprised that TUBITAK houses 19 research facilities in Turkey, nine of which are working in different fields of Information and Communication Technologies (ICTs) and electronics. Mr. Hussain expressed COMSATS' desire to enhance collaboration with TUBITAK on long-term basis for creation of critical mass of I.T experts. In this regard, Mr. Hussain requested Dr. Murat to identify relevant experts from their institutes in the field of Cyber Security. Mr. Murat assured that he would contact relevant persons in TUBITAK Informatics and Information Security Research Center (BİLGEM) and one of MAM's R&D supporting unit, National Academic Network and Information Center (ULAKBİM).

Mr. Hussain urged TUBITAK MAM to offer scholarships for students from COMSATS' member countries. In this regard, Dr. Murat informed that agenda of scholarship programme customized for PhD and Postdoc for students from COMSATS' member countries will be presented for approval in the upcoming meeting of TUBITAK Board of Directors. Further, he also informed that agenda for secondment from TUBITAK MAM at COMSATS Secretariat and consideration of payment of Annual Membership Contribution to

COMSATS Secretariat for operational expenses will also be presented to the Board's meeting.

Mr. Murat also visited the COMSATS Internet Services Technology Park in the vicinity and held a meeting with its CEO, Mr. Jamshed Masood.

Meeting with the First Secretary, Embassy of China in Islamabad

Mr. Jia Wei, First Secretary (S&T), Embassy of China in Islamabad, visited COMSATS Headquarters on 12th June 2017, and held a meeting with Dr. S. M. Junaid Zaidi, Executive Director COMSATS. Mr. Tajammul Hussain, Advisor (Programmes) and Mr. Farhan Ansari, Sr. Assistant Director (Programmes) also attended the meeting.

During the meeting, the Executive Director praised the Chinese R&D organizations and universities for their excellent research activities and achievements, and informed that COMSATS wishes to enhance collaboration with such organizations of China in various fields of science and technology. In this regard, the officials of the two organizations discussed avenues of COMSATS' collaboration with R&D organizations working under the Chinese Ministry of Science and Technology (MoST), as well as the Chinese Academy



of Sciences (CAS). With regard to COMSATS' S&T collaboration with Chinese S&T organizations, it was agreed that the possibilities will be explored for benefitting from the funds available under the China-Pakistan Economic Corridor (CPEC). The potential areas of collaboration include: setting-up of joint laboratories and establishment of an S&T Park in Pakistan. COMSATS will also explore the possibility of inducting more Chinese R&D organizations in its Network of International S&T Centres of Excellence.

Meeting with the Ambassador of Tunisia in Islamabad

On June 15, 2017, a meeting was held between the Executive Director COMSATS and the Ambassador of the Republic of Tunisia to Pakistan, H. E. Mr. Adel Elarbi at the Embassy of Tunisia, Islamabad. Mr. Tajammul Hussain, Advisor (Programmes), was among the senior officials accompanying Dr. Zaidi.

Dr. Zaidi and H.E. Mr. Elarbi had similar views on developing further cooperation and partnerships between COMSATS and Tunisia, particularly academic linkages between Tunisian S&T institutions and members of COMSATS' Network of International

S&T Centres of Excellence. During the meeting, a number of important matters of mutual interests were discussed, such as a proposal for establishing R&D Centre in Tunisia, financial cooperation, faculty and student exchange, and cooperation for establishing technology parks.

The Executive Director apprised the Tunisian Ambassador about the post-graduate and doctoral scholarships, and post-doctoral fellowships offered at COMSATS' Centres of Excellence in China, Pakistan, Iran, and Bangladesh. He sought the support of Tunisian Ambassador for inviting the international students of Tunisia for short-term student exchange at two Centres of Excellence of COMSATS in Pakistan, CIIT and the ICCBS. During the meeting, Dr. Zaidi also proposed the establishment of

COMSATS-Tunisia R&D Centre for Tunisia that could cater to the relevant needs of the country, and assured him of every possible technical and financial support from COMSATS.

The honourable Ambassador extended gratitude for COMSATS' proposal to bring the academic communities of Pakistan and Tunisia closer, and share experiences and good practices relating to training and research.

Meeting with the Ambassador of Jordan in Islamabad

On June 14, 2017, the Executive Director COMSATS visited the Jordanian Embassy, Islamabad, Pakistan, in order to hold a meeting with the Ambassador of Jordan to Pakistan, H. E. Nawaf Khalifa Ibrahim Saraireh. The COMSATS' delegation



comprised of senior officials including Advisor Programmes, Mr. Tajammul Hussain; Mr. Laeeq H. Jaswal, Manager (Strategic Partnerships); and Mr. Shahzad Ahmad, Manager at International Office. The Ambassador was assisted by his colleagues at the Embassy, Mr. Falah al Ghafari, Deputy Head of Mission; and Mr. Abdul Aziz, Cultural Attaché.

During the meeting, Dr. Zaidi expressed COMSATS' desire to have better working relations with Jordanian institutions in order to carry out a large number of events and capacity-building activities in Jordan. He also mentioned that the Annual Membership Contribution (AMC) by Jordan is desirable and would be useful in enhancing the country's contribution and gains in COMSATS' activities; however, Jordan's membership to the Commission is not conditional to it.

His Excellency was requested to write to the Secretary General, Higher Council for Science and Technology (HCST), Jordan, Dr. Khaled Elshuraydeh, to seek his help in identifying the country's national priorities for possible collaborations with COMSATS. The possibilities regarding Jordanian students' admission in other institutions of Pakistan were also discussed and it was assured that COMSATS will provide all possible facilitation for securing admissions as well as scholarships.

The Secretariat officials also proposed establishment of a university in Jordan on the same lines as CIIT in Pakistan. His Excellency informed them about Princess Sumaya University and encouraged them to explore possible areas and modes of collaboration between the two higher education institutions. The Ambassador was also informed about COMSATS' support to 30 scientists from Jordan for their research activities.



Meeting with the Ambassador of Sudan in Islamabad

On 19th June 2017, a delegation from COMSATS headed by Executive Director COMSATS visited the Embassy of the Republic of Sudan in order to hold a meeting with the Ambassador of Sudan to Pakistan, H.E. Mr. Tageldin Elhadi Eltahir. Dr. Zaidi was accompanied by Mr. Tajammul Hussain (Advisor Programmes); Mr. Laeeq H. Jaswal (Manager Strategic Partnerships); and Mr. Shahzad Ahmed (Manager at CIIT's International Office). Also present during the meeting was the First Secretary Ms. Ebtihal Mohammed Osman Bashir.

The Executive Director expressed desire to further strengthen COMSATS' working relations with Sudan. He mentioned the active participation of Industrial Research and Consultancy Centre (IRCC), Sudan, in COMSATS' programmes. He also appreciated the Annual Membership Contribution made by Sudan on regular basis. Dr. Zaidi expressed COMSATS' desire to replicate the institution building success in the form of CIIT in Sudan by establishing a university under the umbrella of COMSATS. He emphasized the need for having a state-of-the-art facility to impart important knowledge to the people of Sudan. Dr. Zaidi also invited the

Sudanese Professors to visit Pakistan and share their best practices and carry out research in CIIT.

The Ambassador thanked the Executive Director and expressed willingness of Sudanese government to enhance cooperation and work with the partner organizations. The Ambassador showed keen interest in the Professor exchange program and collaborations for capacity- building events.

While answering a question, Dr. Zaidi explained the scholarship offers from COMSATS CoEs. Mr. Hussain brought to the Ambassador's attention a few capacity-building events held in Sudan in collaboration with Ministry of Higher Education and Scientific Research, and the Industrial Research and Consultancy Centre (IRCC), Sudan.

Meeting with the Malaysian High Commissioner in Islamabad

On 19th June 2017, the Executive Director COMSATS, with other officials of COMSATS called on Dato' Dr. Hasrul Sani Mujtabar, High Commissioner of Malaysia to Pakistan, at his office in Islamabad. Other officials from COMSATS were Ambassador (R) Fauzia Nasreen, Advisor to Executive Director



in International Relations; Mr. Laeeq Jaswal, Manager Strategic Partnerships; and Mr. Shahzad Ahmed, Manager International Relations. Also present during the meeting were Sy. Nauzer IDID Dato' SY. Yosoff IDID, First Secretary/ HOC; and Incharge Education Programmes at High Commission of Malaysia.

The meeting was primarily held to follow up the matter of Malaysia's membership to COMSATS, as well as related issues such as establishing a ministerial Focal Point in Malaysia, and nomination of a suitable Malaysian institution to become the organization's Centre of Excellence. Possibility of further collaborations between COMSATS Institute of Information Technology (CIIT) and Malaysian universities was also discussed which also included promotion of cultural exchanges. Briefing the High Commissioner, Dr. Zaidi highlighted the benefits of joining COMSATS as Member State and affiliating a Malaysian institution with COMSATS' Network, based on which he requested the High Commission to continue to pursue the matter of Malaysia's accession to COMSATS. He further informed

the High Commissioner about the Annual Membership Contribution of COMSATS' Member States, which is kept in separate account as a trust fund for the contributing country and is spent on programmes, inter alia, on scholarships, organizing joint seminars and conferences, and travel expenses of scientists for participation in different events abroad. It was also mentioned that COMSATS Secretariat's operations are financially supported by the Government of Pakistan.

The High Commissioner affirmed all possible support of the High Commission of Malaysia towards COMSATS and promised to once again take up the accession proposal with his authorities. He also pledged to facilitate meetings of COMSATS' delegation with officials of relevant Government departments in Malaysia.

The Executive Director agreed with the suggestion and expressed interest in inviting Malaysian experts in the area of Islamic Finance from Malaysia to deliver lectures at CIIT. The High Commissioner of Malaysia praised the Executive Director's efforts for consolidating ties between the universities of Malaysia and Pakistan,

and his interest in cultural exchanges.

Meeting with the Participants of 25th Advanced Diplomatic Course Organized by Ministry of Foreign Affairs, Pakistan

On 16th March 2017, a group of six mid-career diplomats from the COMSATS' Member Countries visited COMSATS Secretariat, Islamabad on invitation from Dr. S. M. Junaid Zaidi, Executive Director COMSATS. These diplomats were receiving training at 25th Advanced Diplomatic Training Course organized by the Foreign Services Academy, Ministry of Foreign Affairs, Government of Pakistan. The group comprised of Mr. Idrees Yaqub and Mr. Bin Yameen Yahya Tanko, Deputy Directors, Ministry of Foreign Affairs (Ghana); Mr. Achach Abdellah, Secretary, Ministry of Foreign Affairs (Morocco); Mr. Joseph Alto Ahois Kapuiga, Foreign Services Officer, Ministry of Foreign Affairs (Tanzania); Mr. Christy Ruban Augustin, Deputy Director, Ministry of Foreign Affairs (Sri Lanka); and Mr. Tickakunde E. M. Mutseyekwa, Deputy Director, Ministry of Foreign Affairs (Zimbabwe).



These foreign trainees had an informal discussion with the senior officials of COMSATS Secretariat that included the Executive Director COMSATS; Mr. Tajammul Hussain, Advisor (Programmes); Mr. Bilal Chouhan, Director (A&E); Ambassador Fauzia Nasreen; and Dr. Arshad. S. Malik, Advisor, International Office of the COMSATS Institute of Information Technology (CIIT).

Dinner for the International Participants of Conference on Agriculture, Food Security and Biotechnology

To honour the international speakers

and participants of the Conference on Agriculture, Food Security and Biotechnology (Page 29), a dinner was hosted by the Executive Director COMSATS, Dr. S. M. Junaid Zaidi, on 26th April 2017. The dinner was attended by a total of 110 persons, including local and international participants and organizers of the conference. Officials from the Ministry of Foreign Affairs, and Ministry of Science and Technology, Pakistan, also attended the dinner.

Speaking at the dinner, the Executive Director COMSATS noted that scientists in Pakistan are doing excellent research work that needs to be promoted and commercialized. He

suggested that COMSATS Institute of Information Technology (CIIT), a flagship project of COMSATS, should join hands with National Agriculture Research Center (NARC) for collaborative work aimed towards betterment of science, agriculture and society.

Dr. Yusuf Zafar, Chairman PARC, mentioned that this year Pakistan produced surplus wheat, potato, sugarcane, and corn. The yield, he noted, was the highest in 70 years that was possible only due to knowledge-based information sharing with the farmers.





Meetings with Officials from Host Country



Mr. Parvaiz Ahmed Butt, Founder Executive Director COMSATS

On 11th April 2017, Mr. Pervaiz Butt, the Founding Executive Director of COMSATS, visited COMSATS

Secretariat. Mr. Butt was invited to honor his remarkable efforts for the development and establishment of COMSATS. He was accompanied by officials from COMSATS Institute of Information Technology (CIIT), Islamabad. During his visit to

Headquarters, he was shown the newly constructed building of COMSATS. Mr. Butt held discussion with the officials of COMSATS Secretariat sharing his experience and best practices as one of the pioneers of COMSATS.



The Executive Director COMSATS thanked the former Executive Director for visiting COMSATS Secretariat and assured him that COMSATS would continue making efforts for achieving the mission of COMSATS. The Executive Director thanked Mr. Butt for always supporting the organization and his continuous guidance.

Mrs. Tahmina Daultana, Member National Assembly, Government of Pakistan

On April 21, 2017, an honorable Member of National Assembly, Ms. Tehmina Doultana, visited the COMSATS Secretariat. She was received by senior officials of



Renowned Scientists of Pakistan in Brainstorming Session on Way Forward for COMSATS

COMSATS. In the past, Ms. Doultana has served as Federal Minister for Science and Technology from March 2008 to May 2008.

Ms. Doultana congratulated Dr. S. M. Junaid Zaidi on appointment as the Executive Director of the COMSATS, and commended him for his dedicated and selfless services as the Founding Rector of the COMSATS Institute of Information Technology. She mentioned that the appointment from the Prime Minister of Pakistan is the recognition of his endless services for promotion and development of science and technology in Pakistan. Dr. Zaidi expressed gratitude to the Honorable Member National Assembly for visiting the Secretariat. He hoped to benefit from her guidance and support in future as well to achieve the desired objectives set by the pioneers of COMSATS.

Brainstorming Session on Way Forward for COMSATS

The Executive Director COMSATS, hosted hi-tea for senior scientists and experts from different institutions

related to science and technology on 29th March 2017. The purpose of the informal sitting was to brief the experts regarding different ongoing activities of the COMSATS and to invite their inputs on COMSATS' projects and programmes.

The hi-tea had participation of some renowned scientists of Pakistan, including Dr. Yousaf Zafar, Chairman Pakistan Agriculture Research Council (PARC), Prof. Dr. Anwar-ul-Hassan Gilani, Chairman Pakistan Council for Science and Technology (PCST), Dr. Muhammad Ashraf, Chairman Pakistan Council of Research in Water Resources (PCRWR), Dr. Zabta Khan Shinwari, President Pakistan Academy of Sciences, and Dr. Aslam Baig, Distinguished Scientist from National Centre for Physics. Mr. Tajammal Hussain, Advisor Programmes, Mr. Bilal Chouhan, Director Administration and Establishment, Mr. Nisar Ahmad, Deputy Director (Systems), and Mr. Akif Sattar, Coordination Officer, from COMSATS Secretariat were also present on the occasion.

Among the ideas shared during the discussions was having international projects like SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) to be emulated in Pakistan to facilitate the scientists of Member States. Similarly, it was suggested that COMSATS, in collaboration with international organizations like UNESCO, can help develop international R&D collaborations on the lines of CERN (European Organization for Nuclear Research).

Focus areas for future activities of COMSATS agreed on by the senior participants included, Health, Food Security, Water Resource Management, Climate Change and Nanotechnology.

It was also suggested that COMSATS can also help develop an advanced center of Nanotechnology for multi-disciplinary research in the field in one of the Member States.

Former Minister for S&T, Government of Pakistan

Former Minister for Science and Technology (MoST), Government of Pakistan, H.E. Rana Tanveer Hussain, visited COMSATS Secretariat, on June 21, 2017. The Minister heads COMSATS' Focal Ministry in Pakistan.

Speaking to the officials of COMSATS, Mr. Tanveer Hussain expressed his willingness and support to COMSATS' operations and efforts to expand the organization's membership. His Excellency expressed concern over the state of S&T and the priority it has been given over the years at national level. Noting how well the developed countries are benefitting from prioritization



of S&T, innovation and R&D, the Minister noted his efforts in the recent years to increase Pakistan's allocated budget for S&T and R&D, which he hopes to have enhanced 10 times (up to 1% of GDP) by 2018. His

Excellency considered it important to have versatility in the leadership of a country to meet the needs of various sectors, and advocated investing in human resource.

Other Distinguished Visitors to COMSATS Secretariat

Mr. Fazal Abbas Maken Federal Secretary, Ministry of Science and Technology, Government of Pakistan	28 th March 2017
Ms. Seema Elahi Baloch Former Ambassador	28 th March 2017
H.E. Mr. Radwan Lutfi Ambassador of Syria to Pakistan	3 rd April 2017
Justice (Retd.) Qazi Khalid Ali Vice Chancellor, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Pakistan	19 th April 2017
Dr. Yusuf Zafar Chairman, Pakistan Agricultural Research Council, Islamabad, Pakistan	20 th April 2017
Prof. M. Iqbal Chaudhry Director, International Center for Chemical and Biological Sciences, Pakistan	9 th May 2017
Mr. Parvez Hassan Member National Assembly, Government of Pakistan	10 th May 2017
Mr. Jia Wei First Secretary, Embassy of China in Islamabad	12 th June 2017
Mr. Muhammad Ashraf Additional Secretary, Ministry of Science and Technology, Government of Pakistan	14 th June 2017



Foreign Interns at COMSATS Secretariat

This year, a group of 8 students from 6 developing countries, Bangladesh, Cameroon, Ethiopia, Gambia, Nepal and Nigeria, was inducted as interns at COMSATS Secretariat, Pakistan. The group received an orientation on 14th March 2017 at COMSATS Secretariat in Islamabad. These students had been pursuing their Ph.D (Biosciences and Mathematics); M.S. (Biochemistry & Molecular Biology and Mathematics); B.S. (Management Sciences, and Telecom Engineering), and post-doctoral fellowships in the fields of bio-sciences and physics. The students from four Member States are availing graduate and post-graduate scholarships offered by CIIT.

On June 3, 2017, a review meeting was held with these talented students to assess the outcomes of the efforts made by them for establishing links between various member countries of COMSATS and its Secretariat. The meeting was chaired by the Executive Director COMSATS, Dr. S.M. Junaid Zaidi. Among others, the meeting was attended by Advisor (International Coordination), Dr. Abdul Aziz Khan, and Advisor (Programmes), Mr.



Tajammul Hussain. The former also mentors the foreign interns.

The amount of work done by the interns during a short period of just two months was appreciated. During this time, they had identified new research institutions for collaborations, suggested improvements in the working of International Thematic Research Groups (ITRGs), and created new inroads through highlighting the work being done by various Centres of

Excellence (CoEs) under the umbrella of COMSATS.

Encouraging the interns on their performance, the Executive Director tasked them to: (i) document their activities at the Secretariat so far, and (ii) develop country-specific projects to make a comprehensive S&T profile and develop concrete linkages of COMSATS with the reputable research centres working in those countries.





Conference on Agriculture, Food Security and Biotechnology

The 3rd International Conference on Agriculture, Food Security and Biotechnology was jointly organized by COMSATS, Islamic Educational, Scientific and Cultural Organization (ISESCO), and Pakistan Agricultural Research Council (PARC), from 26th to 27th April 2017 at National Agricultural Research Centre (NARC), Islamabad, Pakistan. NARC is the largest research centre of the Pakistan Agricultural Research Council (PARC).

The 2-day conference was organized under the biennial cooperation agreement 2016-2017 between COMSATS and ISESCO. Recent developments and emerging trends in food security based on technical and scientific inputs from relevant subject experts were shared and discussed during the conference.

The event comprised of a total of 7 sessions including inauguration, 5 technical sessions and a concluding session. The five technical sessions constituted 32 talks and presentations and poster presentation contest. The resource persons of the conference,

International Speakers of Conference on Agriculture, Food Security and Biotechnology

- Dr. Shadman Namazov, Ministry of Agriculture and Water Resources, Uzbekistan
- Dr. Zihni Demirbag, Karadeniz Technical University, Turkey
- Dr. Mohsen Vaez, Iranian Research Organization for Science and Technology, Iran
- Dr. Radhika Samarasekara, Industrial Technology Institute, Sri Lanka
- Dr. Ghazi H. Badawi, University of Khartoum, Sudan
- Dr. Majid Javanmard, Iranian Research Organization for Science and Technology, Iran
- Dr. Mazahib Adam, Industrial Research and Consultancy Center (IRCC), Sudan
- Dr. Manal Eid, Suez Canal University, Egypt
- Dr. Hanen Falleh, Biotechnology Centre of Borj Cédria (CBBC), Tunisia

included guests from Egypt, Turkey, Tunisia, Sudan, Iran, Sri Lanka, and Uzbekistan, made technical presentations on variety of topics relating to the theme of the event.

The Conference was inaugurated by the Federal Minister for Food Security and Research, Pakistan, H. E. Mr. Sikandar Hayat Khan Bosan, on 26th April 2017 at National Agricultural Research Center, Islamabad, Pakistan. The inaugural session was attended

by 130 participants from different backgrounds, including academicians, students, scientists, media personnel and researchers.

Speaking on the occasion, Dr. Ghulam Muhammad Ali, Member Coordination and Monitoring/ Sr. Director NIGAB, Pakistan Agriculture Research Council (PARC), welcomed the participants and guests of the inaugural session and considered it important to take measures



The Minister for Food Security and Research, Government of Pakistan, H.E. Mr. Sikandar Hayat Khan Bosan at the Headtable of the Inaugural function of Conference on Agriculture, Food Security and Biotechnology



towards food security and safety through effective use of science and technology. He considered the event a platform for fostering research linkages, scientific collaborations and capacity-building.

In the keynote speech titled 'Role of Biotechnology in Agriculture for Food Security', delivered by Prof. Dr. Kauser A. Malik, Department of Biological Sciences, FC College Lahore, Pakistan, it was noted that it is the fear of unknown that keeps the human beings away from adopting the new technologies and advocated openness to the use of genetically modified (G.M) crops to address hunger and malnutrition. He asserted that the GM foods are no more harmful to the environment and biodiversity than commercial agriculture. He

appreciated that organizations like ISESCO and COMSATS were taking keen interest in agricultural biotechnology.

The Executive Director COMSATS, Dr. S. M. Junaid Zaidi, in his message noted the strong influence of biotechnology on food production and agriculture is undeniable, especially for countries like Pakistan with fertile lands and suitable weather conditions. He encouraged scientists, farmers and extension specialists to come forward and create a regular forum meant to discuss issues related to theme of the Conference. Dr. Abdulaziz Othman Altwaijri, Director General ISESCO, in his message stressed that the world is facing multiple challenges in achieving food sustainability while conserving natural

resources.

Dr. Yusuf Zafar, Chairman PARC, in his inaugural address opined that for achieving productivity as well as sustainability of agricultural systems, it is crucial to remain up-to-date about new technologies that might have potential to change production and consumption concepts, standards and paradigms.

The Chief Guest, Federal Minister for Food Security and Research, Pakistan, His Excellency Mr. Sikandar Hayat Khan Bosan, stressed upon the need to encourage and support smart agricultural practices. His Excellency assured full support of his Ministry towards initiatives for sustainable food production and food security.





The deliberations of the conference were spread over five technical sessions and a parallel poster contest, covering issues, research and findings related to:

- genome sequencing methods;
- marker-assisted breeding for crop improvement;
- microbial bio-pesticides and bio-stimulants;
- antimicrobial treatment for food safety;
- bio-products in plant protection;
- technologies of the agro-food products processing;
- environmental risk assessment of transgenic plants; and
- impact of development of agricultural biotechnology research on food and economic security.

The technical sessions of the conference covered a total of 32 lectures on multi-sectoral approach, encompassing the crop, livestock, forestry and fishery sectors, as well as the use of microorganisms in these sectors. The conference also underscored the importance of

agricultural biotechnologies for achieving Sustainable Development Goals related to hunger and nutrition. A few distinguished local speakers from the event included Dr. Zabta Khan Shinwari, Quaid-i-Azam University (Islamabad); Dr. Johar Ali, PARC (Islamabad); Dr. Tayyab Hasnain, Centre of Excellence in Molecular Biology (Lahore); Dr. S. M. Saqlain Naqvi, PMAS Arid Agriculture University (Rawalpindi); and Dr. Aftab Bashir, Forman Christian College (Lahore).

Presentations were made on research initiatives by scientists from various academic and research organizations in Pakistan, including COMSATS Institute of Information Technology (CIIT), Islamabad; National Institute for Genomics and Advanced Biotechnology (NIGAB), Islamabad; Centre of Agricultural Biochemistry and Biotechnology (CABB), Faisalabad; University of Gujrat; National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad; Punjab University, Lahore; Institute for Biotechnology and Genetic Engineering (IBGE),

Peshawar; Agricultural Biotechnology research Institute (ABRI), Faisalabad; Institute of Biomedical And Genetic Engineering, Islamabad; and Centre for Agriculture and Bioscience International (Rawalpindi).

The 35 posters covering a wide range of subjects in agricultural biotechnology were displayed throughout the event. Relevant Universities, R&D institutions and industries participated in the poster contest.

The Conference was concluded with closing remarks and vote of thanks by the co-organizers of the event, Dr. Yusuf Zafar (PARC) and Mr. Tajammul Hussain (COMSATS). The international speakers, Dr. Zihni Demirbag, Karadeniz Technical University (Turkey), and Dr. Majid Javanmard Dakheli, Iranian Research Organization for Science and Technology (Iran) also spoke at the concluding session. Certificates were distributed among the participants.



COMSATS Tele-Health Programme

During the reporting period, COMSATS continued its tele-health programme by strengthening its collaborations with relevant partners.

In connection with the Tele-health project of COMSATS, a meeting between the Executive Director COMSATS and Vice Chancellor of Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU-PIMS) was held on 6th June 2017 at SZABMU. In the meeting both the officials were accompanied by the relevant officials from their institutions, which included Advisor Health (CIIT), Principal Medical Officer (COMSATS

HQ) and Asst. Proff. Public Health Department (SZABMU).

Realizing the need for integration of Tele-health into the conventional healthcare delivery system to provide its benefit to the people living in remote areas, both the organizations agreed to join hands to establish a Tele-health system at PIMS hospital for patients from far flung areas of Pakistan, including Gilgit and Baltistan, and Azad Jammu and Kashmir regions.

The preliminary work and survey to establish the Centre have started.

The technical and civil surveys have been carried out to determine the requirements for the establishment of the Centre at PIMS. The surveys will help better financial planning for optimum benefits from the project.

It is hoped that the PIMS Tele-health Centre will be established in a few months and then linked to CIS Tele-health clinics around Islamabad in the initial phase for testing. Later on, remote clinics in other areas of Pakistan will be established and linked with Tele-health Center at PIMS.



A Tele-Consultation in progress between the Resource Centre at COMSATS Secretariat and Tele-Health Clinic in Skardu



Other Activities at COMSATS Secretariat



Lecture at COMSATS Secretariat by Brazilian Ambassador

His Excellency Claudio Raja Gabaglia Lins, Ambassador of Brazil in Islamabad, visited COMSATS Secretariat, on April 12, 2017. The Ambassador was received by the Executive Director COMSATS, Dr. S.M. Junaid Zaidi, and senior officials of COMSATS. On the occasion, Mr. Lins delivered a lecture on 'Pak-Brazil Relations' that was attended by officials of COMSATS Secretariat, and CIIT.

In his opening remarks before the lecture, Dr. Zaidi welcomed the honorable Ambassador and noted the excellent relations of COMSATS with its Brazilian Centre of Excellence, Embrapa Agrobiologia. Based on this experience, he showed his desire to have more of similar synergies between COMSATS and institutions in the South and the North. He underscored the social and cultural strengths of Brazil and also noted the country's contribution to Science and Technology.

He noted that Brazil is the 9th largest

economy in the World and has the highest GDP in Latin America. He informed that Embrapa is undertaking very interesting work of both practical and theoretical significance. Research at its Agrobiology centre, he further informed, is helping to increase agricultural productivity, as well as research capacity of Brazilian scientists in related fields. The sustainable agriculture research made Brazil the largest producer of coffee, soya bean, sugarcane and oranges.

The Brazilian Ambassador informed that his country's R&D has gained a lot of prominence internationally during the last few decades. Sharing some statistics, in this regard, he apprised that Brazil has 2,300 higher education institutions, produced 16,700 Ph.D and Brazilian scientists published 40,500 papers during 2016.

At the end of his informative presentation, the Ambassador responded to a number of questions from the audience that related to BRICS block, education sector of Brazil, cultural and academic



exchanges, and common socio-political issues.

The Executive Director COMSATS Delivers a Lecture to CIIT Faculty

On March 8, 2017, Dr. S. M. Junaid Zaidi, Executive Director COMSATS Secretariat, delivered a lecture at workshop conducted at Faculty Development Academy, COMSATS Institute of Information Technology. The 5-week long workshop was held from February 27th - March 31st 2017 for the young faculty of CIIT at FDA. The objective of the workshop was to help teachers grow as competent professionals, both as reflective practitioners, and applied researchers.

The Director FDA, Mr. S. M. Junaid, welcomed Dr. Zaidi and introduced FDA as the latter's brainchild. FDA was created in 2005 as a training wing of CIIT and was given the mandate to arrange series of training programmes for newly inducted teachers as well as existing faculty of CIIT and other higher education institutions of the country.

In his lecture to the faculty members attending the workshop, Dr. Zaidi shared his view of an ideal teacher – dedicated, compassionate and a dynamic role model. For him, such a teacher is not only an effective facilitator in imparting knowledge, but is also a catalyst of change at a larger scale. He also shared several examples of passionate teachers, mentors and selfless leaders, and asserted that good teaching cannot be reduced to a technique, as good teaching comes from the identity and integrity of the teacher based on his observation and experience. Dr. Zaidi's lecture was followed by a brief Q&A session.

Training of COMSATS' Officials and Staff

In view of the significance and nature of official engagements of COMSATS workforce according to the organization's mission, a five-day training workshop was held for COMSATS' officials and Staff, from 3rd April 2017 to 7th April 2017 by Faculty Development Academy (FDA) of CIIT.

Professional Development Workshop for COMSATS Officers comprised of five lectures on: COMSATS' History Present & Future Prospects by Mr. Tajammul Hussain; Cultural Diversity & Sensitivities by Ambassador Saeed Khalid; Representing Pakistan Internationally- What you ought to know by Prof. Farooq Dar; Self-Branding by Dr. Anil Salman; and Protocols of visits to Foreign Countries by Ambassador Fauzia Nasreen.

The agenda of training workshop for staff comprised of five lectures on the following themes: Grooming and Appearance by Mr. Umar Chaudhry; Civic Responsibilities and Rights as Citizens by Mr. S. M. Junaid; Leading Change by Mr. Khurhseed Yusuf; Workplace Ethics by Mr. Khursheed Yusuf; and Noting and Drafting by Mr. S. M. Junaid.

The workshop was concluded on 7th April 2017 with a concluding note by Dr. S. M. Junaid Zaidi, Executive Director COMSATS and distribution of certificates to the participants.



Publications

During the reporting period, COMSATS' publications continued to serve their purpose of information dissemination. A glimpse at those published during the reporting period is as follows:

COMSATS Newsletter

As a regular information-sharing tool of COMSATS, publication and dissemination of COMSATS Newsletter continued with Issue 6 of Volume 8, and Issues 1 and 2 of Volume 9 published during the reporting period.



Annual Report 2016

COMSATS Annual Report 2016 was finalized with a completely new outlook in April 2017 duly covering COMSATS' activities, including those of its Centres of Excellence. A brief version of the same, entitled 'An Overview of COMSATS Activities in

2016', was also created for a quick and convenient reading.



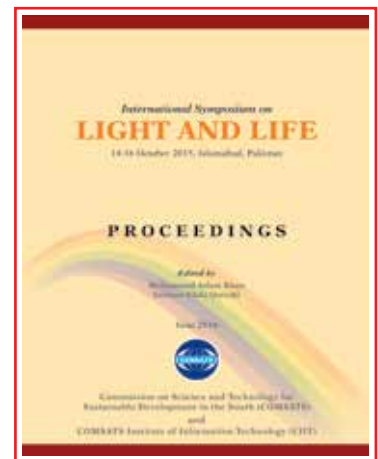
Science Vision (Volume 21)

During the first half of 2017, the composite Volume 21 (issue 1 and 2) of Science Vision was finalized and printed. This volume touches upon the themes of environment, sustainable development goals, innovation, and material science.



Proceedings of International Symposium on Light and Life

COMSATS jointly organized an event with UNESCO's International Year of Light and Light-based Technologies under the title International Symposium on Light and Life. The proceedings of this event were finalized and printed in collaboration with COMSATS Institute of Information Technology.



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A Journal of Science for Development



Commission on Science and Technology for Sustainable Development in the South

...in the ...



Science and Technology for
Development in Our Society (COMSATS)
and
of Information Technology (CITT)



ANNUA



Inside this issue

COMPLATS Best and Award-Winning
Desk

From the Executive Director's Desk

Desk

At the time of its formation, the
company was a small, family-owned
business. It had a long history of
service to the community and was
well-known for its quality products.
The company's success was due to
its commitment to excellence and
its dedication to its customers.

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Cooperation Agreements

Cooperation based on common interests and strengths are formalized among COMSATS, its CoEs and other relevant institutions, every now and then. Some of such agreements for the reporting period are given below:

MoU between COMSATS and Institute of Peace and Diplomatic Studies

On 22nd June 2017, an MoU was signed between COMSATS and Institute of Peace and Diplomatic Studies (IPD), Islamabad, Pakistan. IPD is an independent, non-governmental and not-for-profit think-tank that aims to strengthen global peace through dialogues and diplomacy by knowledge-sharing, research and analysis, and policy development in the areas of peace, conflict, development and diplomatic studies.

The MoU was signed to formalize cooperation between COMSATS and IPD for organizing various events to promote South-South and North-

South cooperation. The broad areas of cooperation stipulated in the agreement include:

- Exchange of Expertise and Intellectual Resources;
- Capacity Building in various areas relating to Sustainable Development;
- Promotion of Programmes and Activities;
- Policy Advice and Strategy Formulation.

Mr. Bilal Chouhan, Director (A&E), COMSATS and Muhammad Asif Noor, Director, IPD, signed the MoU. The Executive Director COMSATS, Dr. S. M. Junaid Zaidi, and President IPD, Mrs. Farhat Asif, also witnessed the signing.

In his remarks after the signing, the Executive Director COMSATS praised the efforts of IPD for developing different informative capacity-building programmes and strengthening relationship within diplomatic community through various means. He also thanked the

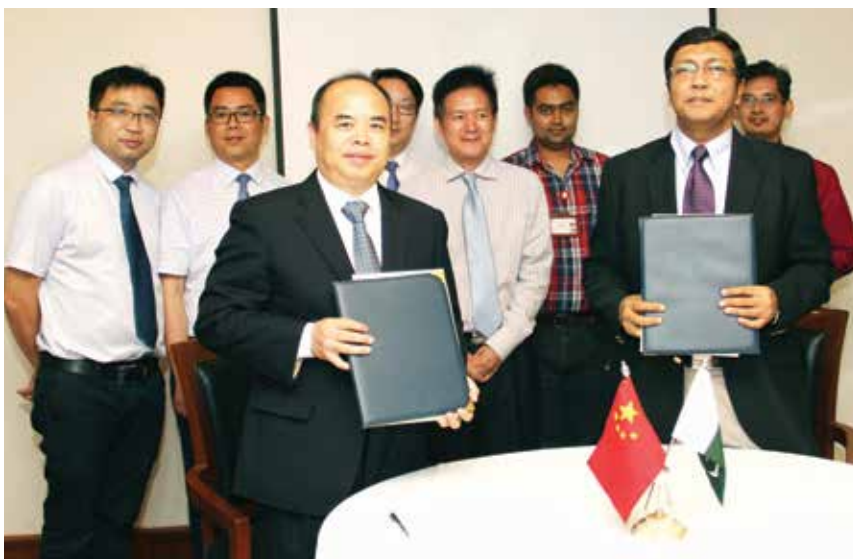
President IPD for joining hands with COMSATS and ensured her of full cooperation for promoting joint activities in the field of Science and Technology.

MoU between NETDZLY, China, and ICCBS, Pakistan

The International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan, signed an MoU with the National Economic and Technical Development Zone in Liuyang (NETDZLY), Hunan Province, China, on June 21, 2017. The MoU aims to facilitate cooperation in Research and Development (R&D) in the field of drugs, health, and food, with respect to their efficacy and safety evaluation, quality control, as well as registration in both Pakistan and China.

The MoU was signed in a special ceremony held at Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD) of ICCBS. Director ICCBS, Prof. Dr. M. Iqbal Choudhary,





and Chairman Administrative Committee of NETDZLY, Mr. Guo Lifu, signed the agreement on behalf of their institutions. Prof. Atta-ur Rahman, former Federal Minister for Science and Technology, and former Chairman Higher Education Commission of Pakistan, Vice Chancellor Hamdard University, Prof. Dr. Ahsana Dar, and Chinese delegates, including Mr. Chen Zhigao, Prof Liu Xinmin, Mr. Wang Dahui, and Prof Jiang Dejian, were also present on the occasion.

According to the MoU, both the parties will endeavor to encourage, promote, and facilitate collaborations among the institutions and interested research groups within the institutional set-up. Cooperation for exchange of scientists, technicians and students, and organization of joint workshops are also included as activities of cooperation under this agreement.

Intent of Cooperation between the ICCBS and Al-Quds University, Palestine

An Intent of Cooperation (IoC) was signed between Al-Quds University, Palestine, and International Center for Chemical and Biological Sciences (ICCBS), for promotion of scientific

and educational activities through collaboration between the two institutions.

Cooperation Protocol between Egyptian Environmental Affairs Agency and NRC, Egypt

On 8th January 2017, Mr. Ahmed Soud, Chief Executive, Egyptian Environmental Affairs Agency; and Dr. Ashraf Shaalan, President, National Research Center (NRC), signed a cooperation protocol on behalf of their organizations. The protocol was based on promotion of technical and applied research capacity in the field of conservation

and protection of environment. By signing the protocol, both the parties pledged to work on new areas of scientific research to sort out issues related to environmental sustainability and development.

The protocol stipulates cooperation on environmental issues, like danger of solid and liquid wastes; climate change; preservation of biodiversity; preservation of natural reserves; and studies of environmental impact assessment.

Intent of Cooperation between COMSATS Institute of Information Technology and China University of Petroleum Beijing (CUPB)

On April 20, 2017, CIIT hosted a delegation from China University of Petroleum (CUPB), Beijing, comprising of Mr. Sun Xudong, Vice Principal of CUPB, Karamay Campus; Mr. XieOingbin, Dean, Faculty of Petroleum; and Ms. Liu Pan, International Admission Officer.

A highlight of the visit included the signing of Intent of Cooperation between CUPB and CIIT that includes significant collaboration between the two universities relating to:

- Exchange of students and faculty;





- Joint research activities and publications; and
- Participation in conferences and academic meetings.

Cooperation Framework Agreement between TUBITAK and CERN

TUBITAK and the European Organization for Nuclear Research (CERN) signed a 'Cooperation Framework Agreement' in Switzerland, inter alia, to allow Turkish research community to make better use of the resources in CERN.

In this connection, a delegation from TUBITAK MAM, headed by its President, Dr. Orkun HASEKİOĞLU, visited CERN and got information about the ATLAS Experiment conducted by 1,800 physicists from 35 countries. The delegation also examined the experiment with the state-of-the-art particle physics

detector that was designed to operate as an external module on the International Space Station. They also had meetings with CERN officials to discuss possible cooperation areas.

The officials of both organizations discussed the infrastructure and workforce potentials of CERN and TUBITAK in detail and negotiated the route for Turkey's attainment of the accelerator technology infrastructure to become a technology leader in its region. Within this scope, they scrutinized the creation of new support programmes for increasing the number of Turkish students and researchers in CERN along with the establishment of a hadron therapy center and development of electronic systems and new software.

The agreement is expected to make a contribution to knowledge-sharing and further development of the cooperation between TUBITAK and

CERN for achieving their strategic targets.

MoU between ICCBS and South African Authority on Halal Affairs

International Center for Chemical and Biological Sciences (ICCBS) signed an agreement with the South African National Halaal Authority (SANHA) - Halal Associates Pakistan, to enhance the scope of Halaal testing services in Pakistan. Both the institutions agreed to jointly work on the testing and R&D activities at Halaal Testing Laboratory (HTL) at the Industrial and Analytical Center - ICCBS.

The Director ICCBS, Prof. M. Iqbal Choudhary, and CEO SANHA Halal Associates, Mr. Yousuf Abdul Razzaq, signed the agreement on behalf of their institutions in a signing ceremony held at ICCBS.



Activities of Centres of Excellence

COMSATS Institute of Information Technology (CIIT), Pakistan

COMSATS Institute of Information Technology (CIIT) has achieved phenomenal growth since its inception in 1998. According to the rankings (2016) of the Higher Education Commission (HEC) of Pakistan, CIIT stands at number three in General Category and at number six among all universities within Pakistan.



Faculty Strength CIIT	
Advisors	55
Professors	52
Associate Professors	104
Assistant Professors	1249
Lecturers	1298
Research Associates	475
Total	3,233

A total of 34,103 students were enrolled in the Institute in Spring 2017 while a total of 44,371 have graduated in 2017. Moreover, CIIT acquired a total of 3 patents during the reporting period.

Visits

Foreign Diplomats: On February 23, 2017 a delegation of 25 senior

diplomats then under training at the 25th Advanced Diplomatic Course of Foreign Service Academy Pakistan visited CIIT. These diplomats represented Europe, Latin America, Asia and Africa.

Afghan Delegation: On February 9, 2017, the International Office (IO) of CIIT in coordination with the Higher Education Commission (HEC) of Pakistan, hosted a visit of five (05) Vice Chancellors from Afghan Universities; namely Kabul Medical University, Herat University, Balkh University, Nangarhar University, and Kandahar University.

Head of World Learning: On 12th January 2017, the Head of World Learning (WL), Ms. Nadya Karim Shaw, visited CIIT for a meeting with its senior management. World

Learning is a US-based education and training company with a mission to empower people and strengthen institutions through education, sustainable development, and exchange programmes.

Delegation from Macquarie University: On April 25, 2017, a two-member delegation from Macquarie University, Australia, comprising of Mr. Abizer Merchant, Director, South Asia and Middle East, and Mr. Tanveer Shaheed, Regional Director, South Asia and Middle East, visited CIIT. The university promised to offer special bursaries for CIIT students to avail the wonderful opportunities being offered by the university.

French Delegation: A 21-member delegation from France visited CIIT on March 15, 2017. The delegation was led by officials from the French Embassy in Islamabad and Higher Education Commission of Pakistan.

Jordanian Cultural Counsellor: The Jordanian Cultural Counsellor, Mr. Mahmoud Oglah Baniata, visited CIIT on 23rd May 2017 to explore possibilities of collaboration between CIIT and Jordanian Universities. Mr. Mahmoud expressed the intention of taking full advantage of the different



academic opportunities offered by the CIIT.

Delegation of Hainan Tropical Ocean University, China: A six-member delegation from Hainan Tropical Ocean University, China, visited CIIT on 9th May 2017.

World Bank Country Representative: The Country Representative of the World Bank in Pakistan, Mr. Patchamuthu Illangovan, visited CIIT on 11th May 2017.

Delegation from British Council Pakistan: A delegation of 20 from various UK Higher Education Institutions and British Council Pakistan visited CIIT Islamabad campus on 26th April 2017 as part of the official event programme of UK – Pakistan Partners' Event from 24th - 26th April 2017.

Ambassador of Thailand to Pakistan: H.E. Mr. Suchart Liengsaengthong, Ambassador of the Kingdom of Thailand in Pakistan, visited CIIT, on 5th January 2017, accompanied by Ms. Marisa, Counselor at Royal Thai Embassy in Pakistan.

Events

Some events that took place at CIIT during the reporting period are as follows:

- Workshop on 'How to write a Research Proposal' (February 23, 2017);
- 'Bosnian Focus Day' (February 22, 2017);
- Talk on 'How to Lead a Successful Career', by Vice President and Chief Human Resources Officer Telenor (February 17, 2017);
- Webinar on 'Simulating the optimization of energy consumption in homes' in Collaboration with Belarus State University of Informatics and Radioelectronics (BSUIR) (February 15, 2017);



- International Seminar on 'Environmental and Climate Change', May 9, 2017;
- IRCBM Journal Club Lectures: The Journal Club Seminars of Interdisciplinary Research Centre in Biomedical Materials (IRCBMs) held talks by the following speakers during the reporting period:

- 'Fabrication of nano-materials (Metal oxide, Metal oxide/grapheme/C-dot/CNT composite with divergent shapes to design)' by Dr Naeem Akhtar;
- 'Finite element analysis of healing of long bones fractures', by Dr. Ali Mehboob;
- 'Nanomaterial-based programming of stem cells for regenerative medicine', by Dr. Saeed ur Rehman.

Bangladesh Council for 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 the R&D sector in the country.

From January 2017 to June 2017, BCSIR scientists have published 103 research papers in different journals. For commercialization, 13

technologies were developed and 18 technologies were leased out to different entrepreneurs.

BCSIR also organized 12 national and international seminars, symposia and conferences.

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

The International Center for Chemical and Biological Sciences (ICCBS), Pakistan, is one of the leading academic research institutions in Pakistan, and has an international repute. ICCBS has been a UNESCO Category II institution since 2015. The Center also serves as the Centre of Excellence of COMSATS, TWAS, WAITRO, OIC and UNCSTD. ICCBS focuses on: research and training for high quality professionals; and extending diagnostic, analytical and clinical testing services to local and regional clients from private and public sectors.

Appointment of Director ICCBS as a Member of NCST, Pakistan

Prof. Dr. M. Iqbal Choudhary, Director ICCBS, was appointed as a member of Pakistan's National Commission for Science and Technology (NCST) for a period of three years in recognition of his meritorious scientific research and services in the field of chemistry.



NCST is the highest scientific advisory commission to Pakistan. The main focus of NCST is to promote scientific and technological capacity-building for sustainable economic growth of Pakistan.

Institutional Capacity-Building

Sino-Pakistan Ethno-medicine Research Center

Pakistan's first Sino-Pakistan Ethnomedicine Research Center established at ICCBS, was inaugurated on 10th February 2017. It is a joint effort to serve the people of Pakistan and China. Chinese and *Unani* (Greek) are the ancient medicine systems of holistic and natural healing.

Chinese Council General, His Excellency Mr. Wang Yu, and Vice Chancellor of ICCBS' parent institution, University of Karachi, Prof. Dr. Muhammad Ajmal Khan, inaugurated the research center, and also delivered key lectures.

Prof. Dr. Yuhui Qin, President Hunan University of Chinese Medicine (HUCM), China, former Federal Minister for Science and Technology, and former Chairman Higher Education Commission, Prof. Dr. Atta-ur-Rahman, and Director ICCBS also spoke on the success. Prof. Hubiao Chen and other Chinese officials and Pakistani scholars were also present on the occasion.

Accreditations and Certifications

ISO 17043:2010 Accreditation for IAC, ICCBS

The Industrial Analytical Center (IAC) of ICCBS got its ISO 17043:2010 accreditation from the Pakistan National Accreditation Council (PNAC), Federal Ministry of Science and Technology, Government of Pakistan, on June 10, 2017. The IAC is the only analytical entity in the country offering a range of analytical and consultancy services to more than 500 industries and other private and public sector organizations.

ISO 9001:2015 Standard Certification

ICCBS also acquired ISO 9001:2015 for its all five research units, according to which Bureau Veritas Certification Pakistan Branch has certified that the management system of the ICCBS has been audited and found to be in

accordance with the requirements of the management system standards of ISO 9001:2015.

Three-day Workshop on DNA-Sequencing Data Analysis at ICCBS

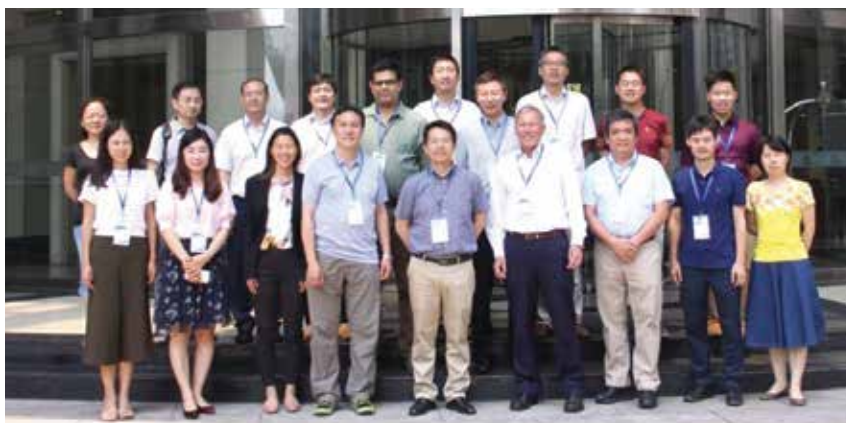
Dr. Panjwani Center for Molecular Medicine and Drug Research of ICCBS organized a three-day workshop on "Next Generation DNA Sequencing Data Analysis" at L.E.J. National Science Information Center of ICCBS, from March 27-29, 2017.

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

The International Center for Climate and Environment Sciences (ICCES), China, originated from the former Center for Climate and Environmental Prediction Research (CCEPRE). Since its establishment, ICCES has been supported by the Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences (CAS), and the Ministry of Science and Technology (MoST), Government of China.

Participation in 20th Meeting of COMSATS Coordinating Council

Among the participants of the 20th Council Meeting was the Director of ICCES, Prof. Zhaohui Lin. He made a presentation during the Meeting as the Council member from China. As the group leader of the International



Thematic Research Groups (ITRGs) on 'Climate Change and Environmental Protection', Prof. Lin presented the progress report covering the research progress, joint-applied international projects, capacity building activities, and international cooperation activities among the ITRG group members.

He highlighted the "Belt and Road Science, Technology and Innovation Cooperation Action Plan", which consisted of People to People Exchange Initiative, Joint Laboratory Initiative, Science Park Cooperation Initiative, Technology Transfer Initiative, and the funds for developing countries and international organizations. This Action Plan will provide support to COMSATS and its network for seeking opportunities for international collaboration.

Capacity-Building Events

Participation in Workshop on Monsoon Climate and Marine Environment Change, Sri Lanka

Third China-Sri Lanka Joint Workshop on 'Monsoon Climate and Marine Environment Change' was held in Colombo, Sri Lanka, from May 24th to 25th 2017. This meeting was hosted by the China-Sri Lanka Joint Center for Education and Research (CSL-CER). Prof. Xiaodong Zeng, Deputy Director, ICCES, attended this meeting and gave a presentation titled 'Changes of Precipitation Extremes in the Mahaweli River Basin', Sri Lanka, from 1975 to 2014.

Climate Themed Workshop with Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia

ICCES hosted the CAS-CSIRO Climate Themed Workshop from June 27th to 28th, 2017, in Beijing, China, sponsored by the Chinese Academy of Sciences (CAS), in collaboration with the Commonwealth Scientific

and Industrial Research Organization (CSIRO), Australia. The workshop deliberated upon research progress under ongoing CAS-CSIRO international bilateral cooperation projects, and discuss as well as select new initiatives for collaboration and the way forward. More than 20 scientists and experts from CAS and CSIRO attended the event. Team leaders from both sides of the five ongoing international cooperation research projects presented the research progress and the expected results, covering varying aspects of climate change, with a particular emphasis on extreme events. During the discussion session, scientists from different projects talked about potential collaboration opportunities and possible funding sources. The network was further enhanced during this workshop. Prof. Lin urged all participants from China and Australia to build closer links between different research projects and seek for cooperation with others to foster new initiatives.

Foreign Visitors

Delegation from CIIT, Pakistan

On April 18, 2017, ICCES facilitated visit of a delegation from COMSATS Institute of Information Technology (CIIT), Pakistan. Prof. Xiaodong Zeng, Deputy Director ICCES, briefly introduced the history and main research focuses of ICCES, as well as the international cooperation activities with Pakistan in recent years. Prof. Bueh Cholaw showcased the short-term climate forecast system. Prof. Javaid Anwar and Prof. Muhammad Shahzad presented the main research fields of CIIT. A discussion was carried out on joint research projects, data-sharing and capacity-building. It was agreed that both parties should actively apply for international collaboration projects under the "Belt and Road" initiative, and conduct joint researches on extreme events, dust-storms and

flood. Prof. Zhaohui Lin also invited more and more students from CIIT to apply for the CAS-TWAS President's Fellowship and other scholarships offered by the University of Chinese Academy of Sciences.

Honorable State Minister for Science, Technology and Research, Sri Lanka

H.E. Lakshman Senewiratne, Honorable State Minister for Science, Technology and Research, Sri Lanka, visited ICCES on April 20, 2017. Prof. Lin Zhaohui presented the cooperation activities between ICCES and Sri Lanka for the last three years, which included S&T collaboration, scientists exchange and training activities, with a particular emphasis on the international joint research on the extreme hydrological events over the Mahaweli river basin of Sri Lanka.

Honorable Lakshman Senewiratne expressed his appreciation of the statistical analysis and predicted results of Sri Lankan extreme events presented by ICCES, and sought bilateral cooperation to meet the local challenges in the field of extreme meteorological and hydrological events including rainstorm and flood.

Vice-Chancellor of University of Ruhuna and Director of China-Sri Lanka Joint Center for Education and Research

Prof. Gamini Senanayake, Vice-Chancellor of University of Ruhuna, and Prof. Tilak Priyadarshana, Director of China-Sri Lanka Joint Center for Education and Research (CSL-CER), visited ICCES on June 29, 2017. Prof. Lin informed that Sri Lanka has always been actively involved in the international scientific and research activities of ICCES, with the University of Ruhuna and CSL-CER standing out among others. Prof. Lin proposed scientific collaboration in greater depth, with focus on the training of young scientists. The Sri

Lankan delegates expressed their heart-felt gratitude to ICCES for its efforts on bilateral cooperation and showed their determination to take concrete measures.

ICCES' statistical analysis in climate disasters and its prediction results will be of great value to Sri Lanka considering the constantly increasing numbers of meteorological and hydrological disasters in recent years.

Graduate Students and Post-doc Programme

Based on the existing international collaboration network, ICCES continued to attract students and young scientists from the developing countries to enroll in the Ph.D. or Post-Doctoral study through the CAS-TWAS PIFI Programme. In 2017, Mr. Alireza Kamal (Iran) was granted the scholarship, while Farhan Saleem (Pakistan), Kritanai Torsri (Thailand), Victor Nnamdi Dike (Nigeria) and Sherly Selton (Sri Lanka) continued their PhD programme in ICCES. Ms. Kalpana Hamal from Nepal is to join ICCES as the awardee of the CAS "Belt and Road" Master Fellowship Programme.

Dr. Bushra Khalid from Pakistan, who joined ICCES as a Post-Doctoral researcher under PIFI program in 2015, completed her research report on the relationship between climate change and dengue transmission in Pakistan in February 2017. Dr. Worachat Wannawong from Thailand also finished his Post-Doctoral research on coupled data assimilation in June 2017, and became a lecturer at Sun Yat-Sen University in Guangzhou, China.

Some Scientific Achievements

ICCES finished thirty-year numerical experiments of ensemble hind casting of IAP-AGCM 4.1, evaluated (Preliminary) the model's forecast ability on summer climate anomaly

and days of extreme high temperature in China, and made further analysis of model biases. The simulation and evaluation of cloud and its short wave radiation effect in East Asia by CAS-ESM, and simulation and prediction of Eurasia snow water equivalent by CMIP5 were also executed.

ICCES made headway towards further improving real-time numerical climate prediction system as well as the research of predictability and methodology of forecasting.

ICCES developed a new module for plant establishment in the dynamic global vegetation model IAP-DGVM, studied the forest ecosystem's response to climate change, and completed the simulation for global fire model comparison project and relevant analysis.

The Center also made great progress on the development of ocean circulation model, land surface model, and the interaction between land and atmosphere.

On May 16, 2017, World Meteorological Organization (WMO) awarded its 61st International Meteorological Prize (IMO) to Prof. Qing-Cun Zeng, founding director and member of ICCES, academician of the Chinese Academy of Sciences. He won the award for his contributions to satellite meteorological remote-sensing theory, numerical weather prediction theory, meteorological disaster prevention,

as well as the earth system model. The IMO Prize, which is the most prestigious award in meteorology, is awarded annually to scientists that have made outstanding contributions to meteorology, hydrology and geophysical sciences.

Industrial Technology Institute (ITI), Sri Lanka

The Industrial Technology Institute (ITI), Sri Lanka, comprises of research and development divisions, technical services divisions and offers different supporting services. The Institute conducts multidisciplinary scientific and industrial research to transfer the technology for rapid industrial development and provide technical services.

Research and Development

- The two major research sections of the ITI, Sri Lanka, Food Technology Section and Herbal Technology Section, which shifted from Colombo premises to Modern Research and Development Complex at Malabe started its operations from January 2017.
- R&D sections of ITI initiated international collaborative research projects with Korean Food Research Institute on endemic fruits and Indo-Sri Lanka research programme on spices during the year.
- A joint research project with Medical Faculty of University of



Sri Jayawardanepura, Sri Lanka, on bioactivity studies of *Eclipta prostrata* and another project to carry out clinical trials on *Coccinia grandis* with Medical Faculty, University of Ruhuna, Sri Lanka, also commenced during the year.

- A project to develop a National Mercury Release Inventory for the industrial sector also commenced during January 2017 with an awareness programme to the Industry.
- Discussions were held with the Ministry of Health, Nutrition and Indigenous Medicine, Sri Lanka, on developing specialized nutritious food for the management of Moderately Acute Malnutrition (MAM) in children between 6 -59 months of age.
- A study on air-quality and noise & vibration impacts for an Environmental Impact Assessment on development activities and infrastructure facilities within the reclaimed land area for proposed Colombo Port City was submitted to relevant authorities.
- Fourteen research articles were published in refereed journals and a patent application was submitted.

Technical Services

- At the request of the Ministry of Education, Sri Lanka, ITI tested and issued a report on the quality of the paper and printing ink on one of the text books issued by the Ministry to the students.
- A rumor on plastic rice in the local market raised fears in Sri Lankan consumers. Therefore, on the request of Consumer Affairs Authority of Sri Lanka, ITI tested the samples submitted by the Authority and issued a test report.
- A Sri Lanka Accreditation Board audit was conducted to obtain accreditation for analysis of pesticides residues, Sudan dyes, Histamine and antibiotic residues by GCMS-MS techniques and heavy metals in water and

inorganic fertilizers by ICP/MS at newly established Residual Analysis Laboratory.

Events and Conferences

Following workshop and seminars were conducted during the reporting period:

- Total Solution for Trace Level Analysis: using AAS, GC, GC-MS, LC, LC-MS/MS and ICP-MS (15th – 17th February 2017);
- Certificate course on Herbal Drugs & Cosmetic Value Addition Techniques (February – April 2017 – 10 Saturdays);
- Training programme on Dehydration of Fruits, Vegetables, Culinary Herbs and Spices (29th March 2017);
- Hands-on Training on Advanced Scientific Instruments for Material Characterization (18th and 19th May 2017);
- Workshop on Troubleshooting in Cottage based Herbal Drugs & Cosmetics Industries (18th May 2017);
- Exhibition and Sale to Empower Cottage Level Entrepreneurs (18th May 2017);
- Awareness Programme for the Stakeholders on Residue Analysis (30th May 2017).

Capacity-Building Events

ITI scientists/engineers and technologists participated in the following events to enhance their knowledge and to share their experience and expertise:

- Sakura programme for government officials organized by Japan Science & Technology Agency, Japan (19th - 25th February 2017);
- Seminar on chemical weapons convention and chemical safety & security management for member states of the OPCW in the Asian Region organized by National

committee for the prohibition of weapons, Iran (21st – 23rd February 2017);

- Application Training workshop on Milestone Neos - GR Microwave System organized by M/S Milestone, Italy (27th – 29th March 2017);
- 3rd International conference on Agriculture, Food Security and Bio Technology organized by COMSATS (26th – 27th April 2017);
- 5th National Laboratory Equipment & chemical Exhibition Iran Lab Expo 2017, Iran (24th – 27th April 2017);
- 3rd Meeting of Medicinal Plants focal points of Indian Ocean Rim Association (IORA) member states, the IORA Regional Centre for Science and Technology Transfer (IORA RCSTT), Indonesia (10th – 12th May 2017);
- International Training Workshop on Advanced Technology of Herbal Medicine for South and South East Asia, China (11th – 30th June 2017);
- 20th Meeting of COMSATS Coordinating Council, Cairo, Egypt (14th – 15th May 2017);
- 2017 South and Southeast Asia Technology Transfer Matchmaking Conference, Kunming, China (12th – 16th June 2017);
- 2017 Seminar on B and R Governance Corporation for China, Southeast Asia, China (5th - 18th June 2017).

TUBITAK Marmara Research Center (MAM), Turkey

TÜBİTAK Marmara Research Center (MAM), Turkey, is an internationally recognized organization involved in research on conventional technologies for enhancing Turkish industry and solving technological problems.

Collaborations

Collaboration with Pakistan in Seismological Research



TUBITAK MAM received a delegation from Pakistan Meteorological Department (PMD) in May 2017 to follow up developments in the joint 'Reverse Linkage Project between Pakistan and Turkey on Earthquake Seismological Research' in collaboration with Turkish Cooperation and Coordination Agency (TİKA); and Islamic Development Bank (IDB). The project aims to eliminate three main deficiencies in the field:

(1) data collection on seismic activities in Pakistan, (2) analysis of seismological data, and (3) conversion of seismological data into useful information for governmental institutions.

Meeting with Officials of TNO

Officials from Netherlands Organization for Applied Scientific Research (TNO) and TUBITAK MAM had a meeting on the scientific and technological cooperation opportunities and events as part of the 2017 Turkey-Netherlands Science Year. The meeting was attended by the President of TUBITAK MAM, Dr. Orkun HASEKİOĞLU, and the Business Development Director of TNO, Dr. Sühendan ADIGÜZEL.

Participation in Events

20th Meeting of COMSATS

Coordinating Council: During the 20th Meeting of COMSATS Coordinating Council held in Cairo, Egypt, the President of TUBITAK MAM delivered a presentation on the structure and activities of TUBITAK and explored the possibilities of cooperation with COMSATS' Member States.

MENA Region Workshop of Mansoura University in Egypt:

As part of the 'Higher Education Excellence in Development Cooperation (EXCEED II)' Programme, the representatives of TUBITAK MAM's Environment and Cleaner Production Institute took part in the Workshop on 'Solutions to Water Challenges in MENA Region' that was held by Mansoura University, on 25th - 30th April 2017, in Cairo, Egypt. The Workshop allowed the participants to discuss major water problems in the Middle East-North Africa Region and to exchange knowledge and experiences on sustainable urban water management, water challenges in the region and solutions to these challenges.

Ministerial Conference on Strengthening Euro-Mediterranean Cooperation through Research and Innovation - PRIMA Initiative:

The Ministerial Conference on Strengthening Euro-Mediterranean Cooperation through Research and Innovation was held on 3rd and 4th May 2017, in Valletta, Malta. In the event, TUBITAK MAM was represented by its President, Dr. Orkun HASEKİOĞLU. He delivered a speech on migration in a session attended by the Ministers of Research and Innovation and the officials of the European Commission. In his speech, he expressed that migration posed more challenges than ever on national policies and international relations and that Turkey participated in the PRIMA Mediterranean Environmental Research Initiative to help making use of natural resources reasonably and protecting them for next generations.

4th International Nuclear Power Plants Summit: The 4th International Nuclear Power Plants Summit that brought together Turkish and international companies operating in nuclear energy sector was held on 8-9 March 2017, in Istanbul. The President of TUBITAK MAM participated in the opening ceremony of the Summit

and delivered a speech.

Expo Turkey by Qatar: TUBITAK MAM took part in the 'Expo Turkey by Qatar' exhibition that was held in Doha, Qatar, from 19th to 21st April 2017. The expo had a participation of more than 200 Turkish companies with a view to making Qatar and Turkey two economic attraction centers of the region.

The exhibition was opened with the opening remarks of the Ambassador of the Republic of Turkey in Doha, Mr. Fikret ÖZER, and the Vice President of the Chamber of Commerce and Industry of Qatar, Mr. Mohammed Bin Ahmed Bin Towar Al Kuwari. TUBITAK was awarded the "Innovation Prize of the Year" during the event.

13th International Defence Industry Fair 2017: The 13th International Defence Industry Fair (IDEF-2017), which has been held biennially since 1993 by Turkish Armed Forces Foundation, was held in Istanbul from 9th to 12th May 2017. More than 800 companies from over 50 countries participated in the Fair. TUBITAK MAM was represented in the Fair through the product and project exhibitions by the Center's Energy Institute, Materials Institute and Institute of Chemical Technology.

Heritage Istanbul 2017: Restoration, Archeology, Museum Technologies Fair and Conference was held in Istanbul, on 27-29 April 2017 with a view to bringing together public servants, academics, sector suppliers, institutions and organizations who work for the protection, conservation and transfer of Turkey's cultural heritage assets to next generations.

Officials from the Earth and Marine Sciences Institute, Industrial Services Unit and Business Development Unit represented TUBITAK MAM in the Fair. On the first day of the Fair, Dr. Turhan DOĞAN, who is in charge of

the Accelerated Mass Spectroscopy (AMS) Laboratory of the Earth and Marine Sciences Institute, made a presentation on "Recent Technologies in Dating Analyses by Carbon-14 and Turkey's Position".

Visitors

Consul General of the Slovak Republic in Istanbul

Consul General of the Slovak Republic in Istanbul, Dr. Jozef ŠESTÁK, visited TUBITAK MAM. He was welcomed by the President MAM, the Vice Presidents and the Directors of the Affiliated Institutes. Discussions were held on developments in the existing projects between TUBITAK MAM and Slovak Academy of Sciences (SAS) and emerging cooperation potentials, based on the scientific, technological and innovational relations that were established with the Protocol dated 02 February 2002 and with joint support programmes since 2003.

Technical Services to the USA

After having catered to requests from China, TUBITAK MAM is now providing test and analysis services to the United States of America. The number of countries served has reached 17 along with the "implantation and subacute toxicity test" requests from the private sector of the USA.

The list of the comprehensive R&D and test & analysis services offered by TUBITAK MAM can be found at the institution's web address "<http://mam.tubitak.gov.tr/en/content/test-analysis-services>".

National Mathematical Centre (NMC), Nigeria

The National Mathematical Centre (NMC), Nigeria, is an inter-university organization, which

promotes research and capacity-building in mathematical sciences. It was established, inter alia, to train and develop a high quality of human resource in Mathematical Sciences (for the purpose of enhancing performance of students in Mathematics and Mathematical Sciences at all levels of Nigerian education system).

Capacity-Building In Mathematics

During the period under review, NMC successfully organized a competition for Mathematics students from Universities across the Nigeria. The competition was held at the Centre from 1st to 6th April 2017, and students from 35 Nigerian Universities participated in the event.

The Centre also hosted a Conference of 'Mathematical Sciences Students Association' of Nigerian Tertiary Institutions for three days from 17th to 21st April 2017.

The selection process for the 2017 International Olympiad started in February this year (2017) and the Centre had already selected candidates that will represent Nigeria in the following Olympiads competitions: Pan African Mathematics Olympiad (PAMO) in Morocco; International Mathematics Olympiad (IMO); International Physics Olympiad (IPHO) in Indonesia; and International Olympiad on Informatics (IOI), Iran.

The nationwide States Development Goals of NMC on Mental Arithmetic and Mathematics Improvement Project on training of students and teachers across the states of the federation was held from January to May 2017. The Mathematics training showed different methods of teaching and learning Mathematics with the use of teaching aids.



Collaborations

In the period under review, NMC initiated collaboration with Professor Nkechi Agwu, Carnegie and an African Diaspora Fellow on Ethno-Mathematics under a capacity building framework in Science, Technology, Engineering and Mathematics (STEM).

The outcome of this joint project will improve the performance of students in mathematical sciences, especially participation of women in STEM related fields and creation of a better teaching methodology for the teachers.

Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

Capacity-Building

Coal Resource Quality Assessment

The TIRDO Energy Division has acquired state-of-the-art equipment (including CHS Analyzer and Bomb Calorimeter Parr 6400) for analyzing coal (and other energy materials) quality. The energy Division's Coal Laboratory is capable of analyzing materials with respect to proximate, ultimate and heating value parameters. It is further capable of

analyzing the inorganic content (trace metals) from materials. To date, the laboratory has analyzed over 60 coal samples from mining companies in Tanzania.

In recognition of this capacity, the Minister for Energy and Minerals declared the TIRDO Coal Laboratory as the National backstop reference laboratory for coal quality assessment for Tanzania.

ICT Department to Launch e-Learning Platform

TIRDO ICT Department plans to soon launch an e-learning platform for practical science subjects for secondary school students who have no access to educational materials as compared to urban schools.

Research Activities

Greener Cassava Processing System Leading to Zero Waste for Enhanced Market Access

The system consists of a grating machine with a pressing unit, a hybrid solar-biogas tunnel drying system for drying cassava grits, yeast fermentation system for bioethanol production and bacteria fermentation system for production of oligosaccharides, and anaerobic digester for biogas production. The aim of this project is to improve

income and welfare of small and medium entrepreneurs in the cassava sub-sector in Tanzania through innovative processing technology.

Publications

Following manuscripts were published by TIRDO scientists during the period:

- Anselem P. Moshi and Ivy Matoju. The status of research on application of bio-pesticides in Tanzania. Review. Crop Protection 92 (2017) 16 – 28;
- Anselem P. Moshi and Nges Ivo Achu. Sustainable Management of Cassava Processing Waste for Promoting Rural Development in Cassava: Production, Consumption and Potential Uses for Nova Publishers Inc. USA (In Handbook on Cassava Production, Potential Uses and Recent Advances, Chapter 7, Ed. Clarissa Klein, ISBN: 978-1-53610-291-8);
- Mihayo Musabila Maguta, YngveStenstrom and Claus J. Nielsen. 'Kinetic and Theoretical Study of the Nitrate (NO₃) Radical Gas Phase Reactions with N – Nitrosodimethylamine and N – Nitrosodiethylamine'. Journal of Physical Chemistry A (2016), 120, 6970 – 6977. DOI: 10: 1021/acs.jpca.6b05440;
- Cecilia China & Mbwana Suleiman Ndaro. 'A review Status on Tanzania Leather value chain – A review'. African Journal of Science and Research, 2016, (5)4: 55 – 60: ISSN: 2306-5877;
- Cecilia Rolence China. 'Adsorption studies on water hardness removal by using cashew-nut shell activated carbon as an adsorbent'. African Journal of Science and Research, 2016, (5)4:78 – 81, ISSN:2306 – 5877;
- Alex Chang, Nick De Souza, John Muya, Julius Keyyu, Angela Mwakatobe, Lucas Malugu, Humphrey Ndossi, Jonathan Konuche, Raphael Omondi,

Aloyce Mpinge, Nathan Hahn, Suzanne Palminteri and David Oslon. 'Scalling –Up the use of Chilli Fences for Reducing Human – Elephant Conflict across Landscape in Tanzania'. Open Access Journal - Tropical Conservation Science Journal vol.9 (2) 921 – 930, 2016;

- George S. Oreku and Fredrick J. Mtenzi. Book Chapter 'Cybercrime: concerns, Challenges and Opportunities'. Published by Springer in the Book Titled "Information Fusion for Cyber-Security Analytics: Pages: 129 – 153;
- William Gomera, George S. Oreku. 'Mobile Technology in Training Micro Businesses: User's Requirements and Architectural Design'. International Journal of ICT Research in Africa and Middle East (IJICTRAME) Pages: 25 – 40;
- Anselem P. Moshi. 'Characterization of Spent Bleaching Earth and Improvement of biogas through supplementation of manure'. Biotechnology Journal International 17(4): 1-13, 2017;
- Raheli Elibariki and Mihayo Musabila Maguta. 'Status of pesticides pollution in Tanzania –A review', Chemosphere. Volume 178, (2017), pp 154 – 164. DOI: <http://dx.doi.org/10.1016/j.chemosphere.2017.03.036>;
- Mbwana Suleiman Ndaro, Josephat Igadwa Mwasiagi, Lodrick Makokha Wangatia. 'Tearing Strength of hydro entangled non-woven fabrics'. Material Science, An Indian Journal MSAIJ,14(12) 2016 (509 – 513);
- George S. Oreku and Fredrick J. Mtenzi. Book Chapter 'Cybercrime: concerns, Challenges and Opportunities'. Published by Springer in the Book Titled "Information Fusion for Cyber-Security Analytics: Pages: 129 – 153;
- Lugano Wilson, Contributor (Tanzania) for the first edition of the East African Community



(EAC) Renewable Energy and Energy Efficiency Status Report. Supported by the United Nations Industrial Development Organization (UNIDO) and implemented by the Renewable Energy Policy Network for the 21st Century (REN21). Available online at <http://www.ren21.net/status-of-renewables/regional-status-reports/>.

Embrapa Agrobiologia, Brazil

Capacity Building Activities

Farmers of Paty do Alferes Participate in Field Day on Cowpea Co-organized by Embrapa Agrobiologia

About 30 farmers in the vicinity of Paty do Alferes, a municipality in the center-south of the state of Rio de Janeiro, participated in a special field day on 'the cowpea culture and its potential for the region'. The day was organized to show the potential of cowpea culture to the local farmers, as despite the high location of Paty do Alferes, the culture develops very well there.

The day was organized by Embrapa Agrobiologia in partnership with Pesagro-Rio, Emater-Rio, the Cedro Institute, the Institute for Community Development and Action (Idaco), the Rio de Janeiro Biological Farmers Association (Abio), and the Rio Rural Program of the City Hall of Paty do

Alferes. The day was carried out at the experimental station of Pesagro-Rio in Avelar, district of the municipality.

Seeds of two cowpea varieties with potential for grain production were distributed to the participants and their use was demonstrated. The researchers conducting the field day also told the participants about biological nitrogen fixation and seed inoculation.

Some farmers took keen interest in the field day as they were interested in utilizing their land for production other than vegetables and fruit, while others eager to test the inoculation. The two types of seeds were planted, some with inoculation and some without. The planted seeds would be observed for their growth and productivity of plants.

Research Projects

Research to help Cheapen Degraded Land Recovery

A simple and cheap technique, which can help the recovery of degraded areas at half the cost of traditional methods has been developed by Embrapa Agrobiologia scientists. According to the report, the method involves use of cardboard to control weeds by crowning (removing weeds by cutting through below their "crown"). Material as abundant as pizza boxes can be used to apply this technique in activities. The technique



can make pasture recovery financially possible for smallholders. Brazil today has about 21 million hectares of Permanent Preservation Areas and Legal Reserves that need to be rehabilitated, most of which have been used as pastures.

The traditional methods to control weeds require too much labour with low operational income, which burdens environmental rehabilitation projects. The new method, which has already been used in croplands, is a novelty for reforestation with native species. In forest recomposition projects, most costs are associated with the control of weeds that endanger the seedlings' growth and survival. About two thirds of the investment are destined to control the so-called weed competition.

Al-Quds University (AQU), Palestine

Al-Quds University, Palestine joined COMSATS Network of Centres of Excellence as its 21st member during the 20th Coordinating Council Meeting. A brief profile of Al-Quds University is given.



Al-Quds University (AQU) was founded in 1984. The main campus of the University is located in Abu Dis with four further campuses in Jerusalem, Sheikh Jarrah, Beit Hanina and Rammalh (al-Bireh). AQU provides higher education and community services within Jerusalem as well as the neighbouring towns, villages and refugee camps in the West Bank.

With over 13,000 students, AQU has outreach to the members from all over the West Bank. With fifteen academic faculties including Arts, Medicine, Dentistry, Law, Qur'an and Islamic Studies, and Engineering, AQU offers huge academic diversity. AQU is a hub of creativity and offers a vibrant learning environment by encouraging exchange of ideas and freedom of expression, as well as leading innovative research to encourage students to be active and engaged citizens, who are open and cooperative, as well as well-informed and interested in different cultures of the world.

The mission of AQU is to equip students with the tools to shape a successful future through promotion of academic research and professional excellence.

The University comprises of over 30 centres and institutes with committed faculty members, which have earned a reputation for high-quality and innovative research and development

as well as using progressive teaching methods that seek not only to adapt to but also to initiate social change.

While the University encourages purely scholarly and research activities, where the end is "knowledge for its own sake," the institution balances its support for the pursuit of pure knowledge with its dedication to a strong interactive role in society, whether through: practice-oriented degrees it offers; practical credit-hours students are required to invest in their given industry or profession; University's research activities in public health, social science, environment, agro-chemicals, etc.; or its outreach programmes and institutes.

Academic Achievements

AQU ranks top in the entire Arab world in the number of peer-reviewed publications per faculty members per year. Among its many faculties and departments are the first Palestinian schools of law and medicine; museums of mathematics, science, and prisoners' affairs; research centers in nanotechnology, biotechnology, information technology, and environmental sciences, as well as centers for community action, legal aid clinics, and an educational television station and media laboratory.

AQU employs approximately 1,300 staff which provides educational services for almost 12,000 students up to the master's degree level. Each year, approximately 1,700 undergraduate students and a transfer class of about 30 students are admitted to programmes at Al-Quds University. More than 45 departments and programmes offer post-graduate education.

Research

The Deanship of scientific research at Al-Quds University (AQU) is

committed to excellence in academic research, which constitutes a major component of the University's mission as an institution of higher education. The University's strategic priorities are to proactively connect with local, national, regional, and global educational sectors by enhancing its academic work both at home and abroad.

As part of this strategy to nurture a research-friendly environment for the University's researchers and academics and to enhance AQU's participation in research activities worldwide, funded research projects are being implemented through collaboration with other national and international institutions.

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