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

An Overview of COMSATS' Activities in 2016





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(Excerpted from COMSATS' Annual Report 2016)

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COMS TS

ACTIVITIES OF STATUTORY BODIES

The Coordinating Council of COMSATS comprises the Heads of its 20 International S&T Centres of Excellence. The Council meets once annually to decide on matters relating to the membership of the Network, in consultation with the Consultative Committee. The Council also approves the programmes and budget of the COMSATS' Network, as well as makes rules for governing its own procedures.



The 19th Meeting of COMSATS Coordinating Council (May 17-18, 2016, Islamabad, Pakistan)

COMSATS Coordinating Council held its 19th meeting on May 17-18, 2016 in Islamabad, Pakistan, which was hosted by COMSATS Institute of Information Technology (CIIT). The two-day meeting comprised three technical sessions, in addition to the inauguration and closing sessions, and had participation from 14 Centres, officials from COMSATS Secretariat and officials of partner international organizations, UNESCO, ECO Science Foundation and SESRIC.

The meeting was inaugurated on May 17, 2016, in a graceful ceremony presided over by Mr. Fazal Abbas Maken, Federal Secretary, Ministry of Science and Technology, Government of Pakistan, which is the Focal Ministry of COMSATS in the host country of its Secretariat. Mr. Maken is also the ex-officio Chairperson of COMSATS Consultative Committee. Over 150 participants attended the inaugural ceremony, including the Council members, representatives from government ministries and departments, S&T organizations, R&D institutions, and diplomatic missions of COMSATS' Member States in Islamabad.

A major highlight of the inauguration was the signing ceremony of COMSATS' accession agreement by H.E. Prof. Dr. Aboubacar Senghore, Minister for Higher Education, Research, Science and Technology, Islamic Republic of the Gambia, and the Executive Director COMSATS. By virtue of signing this agreement, the Gambia became the 24th Member State of COMSATS.

Major Outcomes of the Council Meeting

Among the major outcomes of the meeting were:

- Selection of a new Chairperson;
- Signing of Accession agreement by The Gambia;

- Approval of Board of Management of COMSATS' Endowment Fund;
- Offers of technical cooperation and scholarships among Network members in a number of fields;
- Renewed commitment of the Council Members towards COMSATS' programmes and assurance of enhanced participation;
- Approval of financial matters and administrative actions.

39th & 40th Meetings of COMSATS Management Committee

The COMSATS Management Committee assists the Executive Director's Secretariat in the implementation of policy decisions taken by the Coordinating Council and other organs of COMSATS; recommends programmes and budget of COMSATS; monitors financial activities of COMSATS; evaluates rules and regulations of COMSATS Secretariat; and deliberates upon other administrative issues.

COMSATS Management Committee held two meetings under the Chairmanship of Executive Director COMSATS, Dr. Imtinan Elahi Qureshi. The 39th meeting was held on 12th April 2016 whereas the 40th meeting was conducted on 23rd August 2016. The meetings were attended by Mr. Muhammad Amir Malik, the Chief Executive Officer, COMSATS Internet Services; Dr. Tariq-ur-Rahman, former Chairman, Pakistan Council for Science and Technology (PCST); Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Secretariat; Mr. Sabih ur Rahman, Advisor (Host Country Affairs); Mr. M. Bilal Chouhan, Deputy Director (A&E); and Mr. Amanullah Khattak, Deputy Director (F&A), COMSATS Secretariat. The Pro-Rector CIIT attended the 39th Meeting but was unable to attend the later one. Mr. Zhang Haihua, the first Secretary (Science and Technology) of the Chinese Embassy in Pakistan could not attend the 39th meeting, but attended the 40th meeting.



ACTIVITIES OF THE SECRETARIAT

COMSATS Secretariat serves a dual role of being the Secretariat of the Commission and the Headquarters of the Network of Centres of Excellence. It is responsible for regularly holding statutory body meetings, as well as following-up on their deliberations and decisions. The Secretariat also executes COMSATS' programmes and activities in partnership with other inter-governmental agencies, national S&T institutions, R&D organizations, members of academia and scientific community across the world. Other core activities of the Secretariat relate to: pooling and management of financial resources; enhancing the membership of COMSATS and its Network; and dissemination of information to its stakeholders.



Enhancement of Membership of COMSATS' Commission

- Gambia became 24th Member State of COMSATS. By virtue of its State membership, Gambia will be represented at the Heads-of-State level Commission and the Ministerial-level Consultative Committee of COMSATS.
- Efforts to realize Brazil and Mexico's state membership continued during 2016.

Enhancement of Membership of COMSATS Network of International S&T Centres of Excellence

- As a result of COMSATS active follow-up through correspondence and interactions with Focal Points in these countries, Makerere University from Uganda, and Al-Quds University from Palestine expressed their willingness to join COMSATS' Network of Centres of Excellence.
- A visit of COMSATS' delegation to Morocco, on 20th December 2016, led to further strengthening the case of Mohamed V University, Rabat, Morocco.

Follow-up of the Decisions of the 19th Coordinating Council Meeting of COMSATS

- A major decision of the Council Meeting was election of a new Chairperson to replace the outgoing incumbent, Dr. Eduardo Posada F. The Council had elected Prof. Dr. Ashraf Shalaan, President, National Research Centre (NRC), Egypt, as its new Chairperson for the term of three years (2016-19).
- The Coordinating Council in its 19th meeting unanimously approved the constitution of Board of Management of COMSATS' Endowment Fund.



- The Council had advised the Lead Centres of the inactive ITRGs to make efforts to formally launch their respective Groups with support from COMSATS Secretariat.
- The Council also encouraged the Lead Centre of ITRG on 'Natural Products Sciences' and 'Agriculture, Food Security, and Biotechnology' to overcome their earlier communicated challenges and resume their research activities.

Disbursement of Annual Membership Contribution (AMC)

- COMSATS received grants from six Member States.
- Focal Points of some Member States informed that their AMC is in the process of approval from their respective governments.

Important Meetings

- H.E. Prof. Dr. Aboubacar Senghore, the Minister for Higher Education, Research, Science and Technology, Islamic Republic of the Gambia, visited COMSATS Secretariat, on 19th May 2016.
- The Honourable Minister for Science and Technology, Government of Nigeria, H.E. Dr. Ogbonnaya Onu, paid a visit to COMSATS Secretariat, Islamabad, on 2nd June 2016. His Excellency was accompanied by five Nigerian officials.
- Prof. Azhari Omer Abdelbagi, Undersecretary, Ministry of Higher Education and Scientific Research (MoHESR), Government of Sudan, visited COMSATS Secretariat on 2nd June 2016, for a meeting with COMSATS' officials.
- On June 20, 2016, a group of four Nigerian students called on the Executive Director, Dr. Imtinan Elahi Qureshi, at the COMSATS Secretariat in Islamabad.
- Dr. I. E. Qureshi, Executive Director COMSATS, delivered a keynote address on July 28, 2016, in the Seminar on "Role of Education, Science and Technology in National Security", which was organized in Islamabad, Pakistan.

SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS' SUPPORT

Capacity building activities make a prominent part of COMSATS' programmes aimed at South-South cooperation. The organization has been persistently organizing scientific events in areas of crucial importance to strengthen scientific linkages; build indigenous capacities; and promote S&T as a tool for development. Since its establishment, COMSATS has organized and sponsored numerous national and international events on various subjects. These events provide a useful platform to the members of the scientific community, development experts, donor and development agencies, and the decision makers in particular from Member states, to share their views and experiences on contemporary issues of importance for S&T- led socio-economic development.



The following are the events co-organized by COMSATS during 2016:

- 6th International Workshop on Internet Security: Enhancing Information Exchange Safeguards (19-23 December 2016, Rabat, Morocco) in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO); and the Inter Islamic Network on Information Technology (INIT);
- International Workshop on Nanotechnology for Young Scientists (28-30 November 2016, Selangor, Malaysia) in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO) and Universiti Kebangsgaan Malaysia;
- Seminar on Celebrating Science Centers and Science Museums (17 November 2016, Islamabad, Pakistan) in collaboration with the Office of Research, Innovation and Commercialization (Professional Development Department) of COMSATS Institute of Information Technology (CIIT), Pakistan;
- Regional Expert Meeting on Renewable Related Energy Focusing on Microalgae Technology Using Ocean Resources Including Solar and Fuel Cells (31 October – 1 November 2016, Zahedan, Iran) in collaboration with Centre of Excellence in Iran, the Iranian Research Organization for Science & Technology (IROST);
- International Conference and Exhibition



on Renewable Energy Technologies (18-20 October 2016, Islamabad, Pakistan) in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO) and Pakistan Council of Renewable Energy Technologies (PCRET);

- 2nd International Conference on Agriculture, Food Security, and Biotechnology (17-18 October, 2016, Khartoum, Sudan) in collaboration with Islamic Educational, Scientific, and Cultural Organization (ISESCO), University of Khartoum, and the Industrial Research and Consultancy Centre (IRCC), Sudan, under the patronage of the Ministry of Higher Education and Scientific Research (MoHESR), Government of Sudan;
- 15th CTWF International Symposium on Atmospheric Aerosol and the International Lecture Courses on Atmospheric Aerosols (19-27 September 2016, Beijing, China) hosted by COMSATS' Centre of Excellence in China, the International Center for Climate and Environment Sciences (ICCES), and co-organized by COMSATS, CAS-TWAS-WMO Forum (CTWF), the Aerosol Comparisons between Observations and Models (AeroCom), and the International Satellite Aerosol Science Network (AeroSAT);
- Seminar on Framework of Sustainable Development Goals (SDGs) (22 September 2016, Islamabad, Pakistan) in collaboration with the Pakistan Academy of Sciences;
- 3rd International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (31 May - 1 June 2016, Amman, Jordan) in collaboration with the Royal Scientific Society (RSS), Jordan;
- 9th National Workshop on Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries (23-27 May 2016, Enugu, Nigeria) jointly organized by COMSATS; the Islamic Educational, Scientific and Cultural Organization (ISESCO); and Federal Ministry of Science and Technology (FMST), Nigeria;
- Regional Workshop on Biosafety and Biosecurity in Life Sciences Research (24-28 April 2016, Islamabad, Pakistan) in partnership with Pakistan Academy of Sciences.

ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

COMSATS' International Thematic Research Groups (ITRGs) are based on research collaboration among clusters of scientific institutions in specific fields of Science and Technology related developmental needs of Member States. Based on their respective expertise, selected Centres of Excellence of COMSATS are designated as the Lead Centres of these Groups while the membership is open to all relevant institutions. The member institutions of a Group are expected to complement one another's scientific capacities for a coherent goal-oriented R&D activity under the guidance of the designated Group Leader.



COMSATS' International Thematic Research Group on 'Climate Change and Environmental Protection'

Fifth meeting of COMSATS' ITRG on 'Climate Change and Environmental Protection' (28 September 2016, Beijing, China)

The fifth meeting of COMSATS' International Thematic Research Group (ITRG) on 'Climate Change and Environmental Protection' was held on 28th September 2016, in Beijing, China. The meeting was hosted by the International Center for Climate and Environment Sciences (ICCES), China, and chaired by its Director, Prof. Zhaohui Lin, who is the designated Group Leader.

During the technical session, the participants of the meeting presented their country specific meteorological data, on-going projects, and research expertise and interest. It was informed that a joint paper on studying floods and droughts using GIS is being prepared by two ITRG members, Dr. Shahina Tariq (Pakistan) and Dr. Chandima Gomes (Malaysia), in which the support provided by COMSATS is being duly acknowledged.

The group reviewed its progress and identified the six topics for its future activities. The meeting also finalized Work Plan and time-line for the activities of the aforementioned sub-groups/ topics for the period 2016-2017.

COMSATS Thematic Research Group on 'Agriculture, Food Security and Biotechnology'

Second Meeting of COMSATS Thematic Research Group on 'Agriculture, Food Security and Biotechnology'

COMSATS' International Thematic Research Group (ITRG) on 'Agriculture, Food Security,



and Biotechnology' held its second meeting on October 19, 2016, at the Industrial Research and Consultancy Centre (IRCC), Sudan. Representing the host institution of the meeting, Dr. Widad H. AbdelHalim, Director General IRCC, chaired the 2nd meeting of the Group. IRCC, COMSATS' representatives, Members of the Group belonging to University Cheikh Anta Diop (UCAD), Senegal, and officials of COMSATS Institute of Information Technology (CIIT), Pakistan, attended the meeting. Topics relating to the theme of the Group's proposed collaborative research project were introduced, along with relevant proposals by IRCC and Agriculture Research Corporation (ARC), Sudan. The participants of the meeting deliberated on broad goals of the joint research project and agreed on the following objectives for the said project:

- enhancement of heat and salinity stress tolerance in Wheat;
- screening and evaluation of Wheat germplasm for high productivity;
- producing a suitable Wheat variety for processing; and
- application of modern molecular techniques (DNA markers, protein markers, proteomics, and transcriptomics) in Wheat breeding.

COMSATS' Thematic Research Group on 'Renewable Energy Technologies'

Foundation Meeting of COMSATS' International Thematic Research Group (ITRG) on 'Renewable Energy' (2 November 2016)

The International Thematic Research Group (ITRG) on 'Renewable Energy' was launched on 2nd November 2016, in Zahedan, Iran. The launching took place in the group's foundation meeting that was jointly organized by COMSATS, the Iranian Research Organization for Science & Technology (IROST), and the University of Sistan and Baluchestan, Iran (host institution). The meeting was chaired by Prof. Nasrin Moazami of IROST, who is the designated Group Leader. The meeting was attended by about 40 research scientists belonging to Iran, Bangladesh, Kazakhstan, Syria and Spain.

In order to identify the common areas of research interests and to chalk out the potential topics for research project, the participants of the meeting placed themselves in three groups including: i) Bioenergy, ii) Solar Energy, and iii) Fuel Cell Technology. As an outcome of these discussions, the following two topics were selected to be executed by the group:

i. Measurements and Characterization of New Silicon Crystalline Solar Cells; and
ii. Development of Microbial Fuel Cells for Bioelectric Generation and Wastewater Treatment.



COMSATS' International Thematic Research Group on 'Natural Products Sciences'

COMSATS International Thematic Research Group on 'Natural Products Sciences' is executing the joint research project entitled, 'Drug Discovery from Nature for Neglected Diseases'. As part of the group activity and in keeping with its pledge to train scientists to achieve the group's activities, the Lead Centre of the group, the International Center for Chemical and Biological Sciences (ICCBS) arranged training in medicinal plant research for the eight scientists from Turkey, Iran and Nigeria.

COMSATS' International Thematic Research Group (ITRG) on 'Information and Communication Technologies (ICTs)'

During the reporting period, the group continued its research work related to execution of joint research project entitled, 'e-Solutions for Community using Low-cost Wi-Fi'. Research work for the same continued during 2016.

COMSATS' International Thematic Research Group on 'Mathematical Modeling'

The International Thematic Research Group on 'Mathematical Modeling' is executing a joint research project entitled: 'Mathematical Modeling and Simulation of Air and Water Pollution: Effects and Remedies'. The research activities of the group have resulted in the five scientific publications during 2016.

COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

COMSATS has been endeavouring to expand its cohort of national and international working partners, in order to have broader and more effective collaborations in Science and Technology and launch new programmes and activities with its Centres of Excellence for sustainable socio-economic development of the Members State. These partnerships aim to complement the programmes of COMSATS focused on capacity-building of S&T community in developing countries.



Cooperation with ISESCO

- During 2016, COMSATS and ISESCO jointly organized seven capacity-building events. Over 860 scientists, engineers, technicians and industry professionals benefitted from the events.
- Six capacity-building events are scheduled to be jointly organized during 2017.

Cooperation with UNESCO

A proposal for joint project, entitled 'COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme (Biennium 2016-2017)', was resubmitted to UNESCO. The primary objective of the proposed programme is to build scientific and technical capacities of common Member Countries of COMSATS and UNESCO in the Asia Pacific region, utilizing expertise available within COMSATS' Network of S&T Centres of Excellence, as well as other collaborating institutions.

Cooperation with TWAS

COMSATS' collaboration with TWAS during 2016 resulted in another book under the joint publication, 'Excellence in Science'.

Cooperation with NCP

A Memorandum of Understanding was signed between COMSATS and the National Centre for Physics (NCP), Pakistan, on July 14, 2016, with an aim to promote academic and research activities in COMSATS' Member States.

Interactions with the Host Country, Pakistan

- During the latter part of the 2016, Ministry of Science and Technology (MoST), Government of Pakistan, played an enhanced role in COMSATS' affairs, when the Prime Minister of Pakistan appointed the Federal Secretary MoST, Mr. Fazal Abbas Maken the interim Executive Director COMSATS.
- Interactions continued during 2016 with the Ministry of Finance and Ministry of Law, Justice and Human Rights of Pakistan in connection with COMSATS' Endowment Fund.

INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

The senior officials of COMSATS Secretariat undertake international visits from time to time to strengthen and expand the membership of COMSATS and its network of S & T Centers of Excellence, as well as to participate in International Meetings and to develop partnerships and cooperative mechanisms with relevant institutions in different countries.



The following visits took place during 2016:

Visit to Morocco (18-23 December 2016)

COMSATS' two-member delegation comprising of Mr. Tajammul Hussain, Advisor (Programmes), and Mr. Farhan Ansari, Sr. Assistant Director (Programmes), in connection with International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards', visited Rabat, Morocco, from 18th to 23rd December 2016. Apart from overseeing the arrangements for the workshop, the delegation also held meetings with the Head of ISESCO Center for Promotion of Scientific Research (ICPSR); senior officials of Mohamed V University; Ambassador of Pakistan in Rabat, Morocco; Secretary General, Ministry of Higher Education Scientific Research and Training, Morocco; Director Science and Technology, ISESCO; and the Director of External Relations and Cooperation (ISESCO).

Visit to Malaysia (27 November – 2 December 2016)

Senior Assistant Director (Programmes) COMSATS, Ms. Huma Balouch, undertook a visit to Selangor, Malaysia, to represent COMSATS at and make necessary organizational arrangements for the International Workshop on Nanotechnology for Young Scientists (IWYS-2016) held in Selangor, Malaysia from 28th to 30th November 2016.

Visit to Iran (31 October – 2 November 2016)

Mr. Farhan Ansari, Sr. Assistant Director (Programmes), visited Zahedan, Iran, in order to attend Regional Expert Meeting on 'Renewable Related Energy Focusing on Microalgae Technology Using Ocean Resources Including Solar and Fuel Cell'. Mr. Ansari also attended Foundation Meeting of COMSATS' International Thematic Research Group (ITRG) on 'Renewable Energy', and met President and Senior Officials of the University of Sistan and Baluchestan.

Visit to Sudan (16 – 20 October 2016)

The 2nd International Conference on Agriculture, Food Security, and Biotechnology was held in Khartoum, Sudan, from 17 -18 October 2016. Being member of the Conference's Organizing Committee, Ms. Huma Balouch, Senior Assistant Director (Programmes) represented COMSATS in the event. On the sidelines of the Conference, she also coordinated the 2nd meeting of COMSATS International Thematic Research Group on Agriculture, Food Security, and Biotechnology, held at Industrial Research and Consultancy Centre (IRCC), Khartoum, on 19 October 2016.

Visit to China (23-28 September 2016)

Mr. Farhan Ansari, Sr. Assistant Director (Programmes), visited Beijing, China, primarily for organizing the following two collaborative events of COMSATS including 15th CTWF International Symposium on Atmospheric Aerosol (19-24 September 2016)' and 'the International Lecture Courses on Atmospheric Aerosols (25-27 September 2016)', Beijing, China.

Visit to Jordan (28 May – 3 June 2016)

A two member delegation of COMSATS including Mr. Abdul Majid Qureshi, Research Scholar and Mr. Bilal Zaka, Director COMSATS Institute of Information Technology visited Jordan. The visit was mainly in connection with the organization of 3rd International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture'.

Visit to Nigeria (22 – 28 May 2016)

Mr. Nisar Ahmad, Deputy Director (Systems) COMSATS, visited Nigeria, from May 22-28, 2016, in connection with organization of National Training Workshop on 'Repair and Maintenance of Scientific Engineering Equipment Universities, Research Institutions and Small Scale Industries'.



MAJOR ACTIVITIES AND ACHIEVEMENTS OF CENTRES OF EXCELLENCE

A group of twenty R&D institutions from different developing countries, predominantly COMSATS' Member States, is affiliated with COMSATS constituting its Network of International S&T Centres of Excellence. The Network Members serve as COMSATS' technical resource for South-South cooperation, in line with their mandates for programmes of scientific research and development.



Al-Farabi Kazakh National University (KazNU), Kazakhstan

As of 2016, the Human Resource of KazNU stands at 17,347 students, 1,916 lecturers, 1,862 research scientists, and 3,887 employees. The faculty of KazNU includes 10 academicians and 7 correspondent members of Kazakhstan's National Academy of Sciences, and 446 Ph.Ds in sciences. In the reporting period, the University conducted 145 scientific events. Partnerships in the framework of bilateral agreements connect Al-Farabi KazNU with more than 400 leading universities and research centres from 46 countries. Scientists and university staff applied for patents for 51 inventions, 180 state registration of rights for intellectual property, and 2 foreign patents by National Institute of Intellectual Property.

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

In the year 2016, BCSIR carried out 220 R&D projects, 3 Annual Development Programmes, 8 Special Allocation Project, 1 technical assistance project, and 1 Climate Change Project. During the reporting period, BCSIR published 100 research papers, 13 of which are under process. BCSIR got 9 patents in 2016. Graduate student supervision totaled at 165.

COMSATS Institute of Information Technology (CIIT), Pakistan

Based on the Nature Index, CIIT ranked at number 1 during 2016. Statistics reveal that the university has 35,254 enrolled students, 8 campuses, 3,240 faculty members, 18 departments, 97 academic programmes, 828 officers, 2543 staff members, 589 faculty members sent on scholarships abroad for M.S & Ph.D, 9,119 publications as of SCOPUS, and 100 publications in high impact factor journals. A total of 558 research projects, 190 travel grant applications and 21 proposals for seminars/workshops were submitted to different funding agencies, out of which 128 research projects 62 travel grant applications and 12 seminar workshops were approved. In 2016, CIIT acquired 3 US and 1 Pakistani patents. Twelve seminars, workshops, conferences and forums were held. During the period from January 2016



to December 2016, a total of 135 individuals from various countries visited CIIT. Under CIIT-TWAS collaboration the following exchanges took place during the year 2016: postdoctoral, 05; postgraduate (Researchers), 13; Postgraduate (PhD), 03; and Visiting Scholar (Short-term). During 2016 (January – December) , a total of 303 (38 MS & Postgraduate programmes 265 undergraduate) international students from 12 countries joined CIIT from Afghanistan , Cameroon, China, Gambia, Germany, Iraq, Jordan, Nigeria, Somalia, Sudan, Turkey, and USA.

Industrial Technology Institute (ITI), Sri Lanka

Industrial Technology Institute (ITI), Sri Lanka, has five research and development divisions, four technical services divisions and provides 10 different supporting services. Celebrating the years of excellence in its operations, ITI celebrated its 60th Anniversary in 2016. ITI conducted two events and conferences in 2016. In the reporting period, ITI reached agreements with Korea Food Research Institute, China – South Asia Technology Transfer Center, GIZ Sri Lanka, and Sichuan Institute of Atomic Energy China.

Royal Scientific Society (RSS), Jordan

During the reporting period, the following new testing services were offered: Screening for overall migration of plastic materials and articles into food products; testing for the presence of Toluene in local and imported products; and testing for the presence of hydrogenated oil in dairy products. RSS conducted 12 major R&D activities for the year 2016. The capacity building events in the reporting period were 9, 3 out of which were in collaboration. RSS signed agreements and Memorandum of Understandings with 5 international organizations. The society was granted 4 patents. Moreover, 26 papers were published by RSS researchers during 2016, including those in peer reviewed journals and presented in international conferences.

Water Research and Technologies Center (CERTE), Tunisia

CERTE, Tunisia, is focused on R&D and creation of innovative technologies in the field of water. CERTE constitutes three research laboratories, including waste water treatment; water resources; and treatment of natural water. Sixty researchers, 20 contract researchers, 11 engineers, 28 technicians, and 31 administrative staff constitute CERTE. The Center acquired 2 patents during

2016. It also organized 4 workshops. CERTE is currently a partner in several bilateral projects funded by institutions from Algeria, Egypt, France, Germany, Morocco, Portugal, Japan, Spain and Sweden, and has multilateral cooperation with European Commission.

EMBRAPA Agrobiologia, Brazil

Among other activities, EMBRAPA Agrobiologia conducted a five module course on recovery of degraded areas, and signed a technical cooperation agreement with Pecege Institute (IPecege) of Brazil.

Industrial Research and Consultancy Centre (IRCC), Sudan

IRCC initiated a national programme on industrial development which is meant to serve more than 10,000 beneficiaries from industrial sectors of Sudan.

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

ICCBS, inter alia, signed a Memorandum of Understanding with Academy of Sciences of the Republic of Tajikistan (ASRT). The Center became United Nations Category II Institute after formal signing of an agreement with UNESCO. Its Director was inducted as 'Adjunct Distinguished Professor' by University of Petra, Jordan. The PCMD, ICCBS, secured 12 scholarships from French Government.

National Mathematical Centre (NMC), Nigeria

Activities of NMC, Nigeria, included a two-day International Workshop on Mathematics Fundraising/Strategic Planning.



National Research Center (NRC), Egypt

Incepted in 1956, NRC, inter alia, celebrated its 60th Anniversary in the second half of 2016.

Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

A delegate from TÜBİTAK Marmara Research Center (MAM) visited TIRDO for bilateral cooperation between the two Centres of Excellence.

TÜBITAK Marmara Research Center (MAM), Turkey

President of TUBITAK MAM delivered a talk on Smart Cities and Mobility at the World Automotive Conference held in Istanbul. The Center has started to offer on demand industrial test and analysis services for international clients.



REPORTS OF SPECIAL ASSIGNMENTS

For the benefit of its Member States, COMSATS undertakes special assignments, such as conducting scientific studies, undertaking pilot projects, or implementing educational programmes. Two of COMSATS' projects have been successfully transformed into full-fledged institutions, i.e., COMSATS Institute of Information Technology (CIIT) and COMSATS Internet Services (CIS), while a third project on telehealth is being expanded. The administration related to graduate students from Member States studying at CIIT is also a special assignment that the Secretariat undertakes. Activities under COMSATS' Science Diplomacy Programme have also gained pace.



Board of Governors, COMSATS Institute of Information Technology

In 2016, the Board of Governors, COMSATS Institute of Information Technology (CIIT), held one regular, three special and two emergency meetings, under the chairpersonship of the Executive Director. During the period under report six meetings of Board of Governors were held. These meetings addressed important, policy, administrative and other urgent issues during 2016.

Board of Management, COMSATS Internet Services (CIS)

The Board of Management CIS held its 28th Meeting on 2nd December 2016. The board discussed various issues including general progress, financial performance and current status of CIS' projects under Public Sector Development Programme. Moreover, CIS' operations and services continued to the satisfaction of the board.

CIS is operating in 17 cities of Pakistan, and has more than 10,000 customers from prominent organizations from public and private sector, well-known national and international companies and firms, software and business companies, foreign missions, consulate and embassies, non-governmental organizations, universities, social development and research organizations.
In 2016:

- CIS Technology Park building was inaugurated.
- Three new CIS nodes in Gujranwala, Gujrat and Sukkur cities of Pakistan.
- Generated revenue was PKR 245.27 million during the financial year of 2015-2016 where the net profit was PKR 21.52 million.
- CIS' bandwidth grew from 700 Mbps in 2015 to 1800 (current bandwidth) Mbps in 2016.
- Inauguration ceremony of CIS Tele-Health Center Islamabad was held on December 02, 2016.



COMSATS Tele-Health Programme

In the year 2016, COMSATS Tele-Health Programme

- Focused on collaboration with MALC (Marie Adelaide Leprosy Center) and did feasibility assessment for joint operations in identified areas, i.e., Mirpur Khas and Dir.
- Facilitated Wish International to work for health in Khyber Pakhtunkhwa and Huda Health Center seeking guidance for purchase of instruments

COMSATS' Scholarships

CIIT offers 100 scholarships to COMSATS' Member States at the forum of COMSATS Coordinating Council. In 2016, scholarships were availed by 12 nominees belonging to Nigeria (7), Bangladesh (1), China (1), Palestine (1), and Ghana (2) for their MS and Doctoral studies in various departments of CIIT, including Chemistry, Immunology and Microbiology, Computer Science, Environmental Engineering, International Relations, Remote Sensing and GIS.

COMSATS Science Diplomacy Programme

Realized as a result of deliberations of the 18th Coordinating Council Meeting held in Sri Lanka, in May 2015, and underscored in its Communiqué, lectures under COMSATS Science Diplomacy Programme continued during 2016. The lectures entitled, Science Diplomacy: An Overview; Biosurveillance: Science Needs for Microbial Forensics; Scientific Perspectives on Sustainable Development Goals for Pakistan, were delivered by relevant experts.

PUBLICATIONS AND INFORMATION DISSEMINATION

Information dissemination through publications is an important mechanism of outreach for COMSATS, which is done through four major tools: bimonthly Newsletter, bi-annual journal 'Science Vision', COMSATS' Series of S&T Publications and COMSATS' official website, apart from other promotional material. From time to time, COMSATS also collaborates with different institutions to bring out joint publications.

COMSATS Newsletter

By the end of 2016, a total of 47 issues of the newsletters have successfully kept the stakeholders abreast of COMSATS' activities and aspirations, among other things.

COMSATS' Journal, 'Science Vision'

During 2016, the Volume 21 (1&2) were finalized with 8 papers on different themes including nuclear paradigm, environment, innovation, materials science, and sustainable development goals.

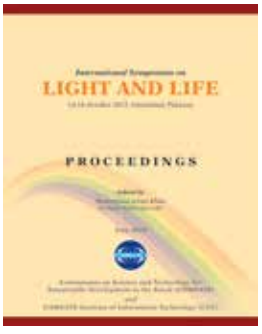
An Introduction to COMSATS Coordinating Council and the Network of Centres of Excellence

A publication, entitled 'An Introduction to COMSATS Coordinating Council and the Network of Centres of Excellence' was brought out in 2016. The informative document holds consolidated information on background, scope, history and summary of manpower and expertise available in COMSATS Network of Centres of Excellence.

COMSATS – TWAS 'Excellence in Science': International Centre for Integrated Mountain Development (ICIMOD)

The third publication under COMSATS – TWAS 'Excellence in Science' covering a Nepalese institution, 'International Centre for Integrated Mountain Development, Kathmandu, Nepal', was brought out in 2016.





One Hundred Reasons to be a Scientist – (Urdu Version)

COMSATS Secretariat formally launched the Urdu version of Book 'One Hundred Reasons to be a Scientist' in later half of the year 2016.

COMSATS' Series of Publications on Science and Technology

In 2015, COMSATS jointly organized an event to observe UNESCO's International Year of Light and Light-based Technologies, under the title International Symposium on Light and Life. Based on the quality of the work presented, it was decided to bring out the proceedings of this event. The book is at its final stages of publications.

COMSATS' Website

The official website was reviewed regularly in 2016 for providing correct and up-to-date information on various undertakings and other aspects of the organizations.

FINANCIAL AFFAIRS

COMSATS Secretariat administers the annual grant by the Government of Pakistan for meeting the recurring expenditure of the Secretariat, besides Annual Membership Contributions received from COMSATS' Member States, as well as COMSATS Endowment Fund.

COMSATS Secretariat maintains and manages the annual grant by the Government of Pakistan for meeting the recurring expenditure of the Secretariat, Annual Membership Contributions received from the governments of COMSATS' Member States, as well as COMSATS' Endowment Fund.

During the year 2016, COMSATS received Annual Membership Contributions (AMC) from six Member States including Pakistan, China, Jordan, Kazakhstan, Nigeria, and Sri Lanka.

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CSIR-Ghana


IROST-Iran


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UCAD-Senegal


ITI-Sri Lanka


IRCC-Sudan


HIAST-Syria


TIRDO-Tanzania


CERTE-Tunisia


TÜBITAK MAM-Turkey

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