





COMSATS

ANNUAL REPORT 2015



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

COMSATS' MEMBER STATES

	People's Republic of Bangladesh
	People's Republic of China
	Republic of Colombia
	Arab Republic of Egypt
	Republic of Ghana
	Islamic Republic of Iran
	Jamaica
	Hashemite Kingdom of Jordan
	Republic of Kazakhstan
	Democratic People's Republic of Korea
	Kingdom of Morocco
	Federal Republic of Nigeria
	Islamic Republic of Pakistan
	The State of Palestine
	Republic of the Philippines
	Republic of Senegal
	Democratic Socialist Republic of Sri Lanka
	Republic of the Sudan
	Syrian Arab Republic
	The United Republic of Tanzania
	Republic of Tunisia
	Republic of Uganda
	Republic of Zimbabwe

March 2016

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

COMSATS' PROFILE

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) was created in October 1994 as an international/inter-governmental organization to act as a global forum of developing countries for their sustainable socio-economic uplift through the applications of science and technology. COMSATS' current membership includes 23 countries located in the continents of Africa, Asia and Latin America, representing a population of over one-third of the world's total. These countries have diverse social, cultural, economic, political, educational and religious backgrounds, and also differ greatly in their scientific and technological potentials. Their common aspirations for development through cooperation in S&T capacity-building is the *raison d'être* of their membership of COMSATS. The Secretariat of COMSATS is permanently located in Islamabad, Pakistan, which is supported by the generous grants from the Government of Pakistan. The membership of COMSATS is open to all developing countries.

MISSION

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

OBJECTIVES AND FUNCTIONS

The major objectives and functions of COMSATS as given in its Statutes are:

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



ORGANOGRAM

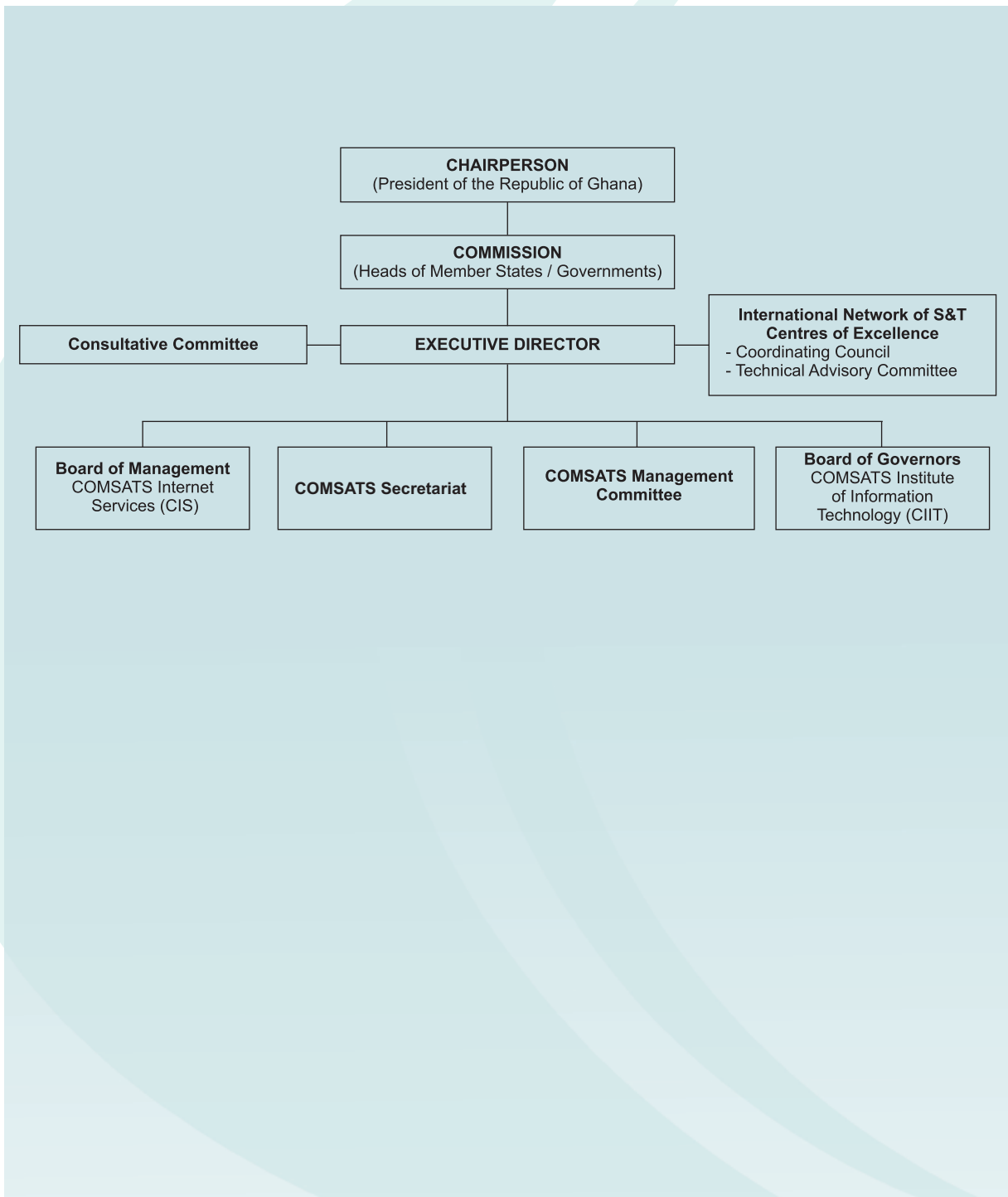


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FOREWORD

COMSATS' Annual Reports, which have been published regularly in the present format since 2009, capture not only the activities carried out under the auspices of the organization, but also try to portray the spirit and enthusiasm behind its programmes through visuals and comments of the participants. In 2015, like any other year, a multitude of programmes were successfully completed in pursuance of the objectives of the COMSATS. The present report highlights the impressive breadth of activities undertaken and the extent of the geographical outreach to Member States in three continents.

The Annual Report of COMSATS is prepared with the following aims in sight:

- i) to create transparency by publicly declaring all engagements in detail, including financial arrangements;
- ii) to preserve the records of proceedings of different events, along with commitments made and plans envisaged, for reference and follow-up;
- iii) to acknowledge and project the invaluable contributions made by COMSATS' Network of Centres of Excellence, partner international organizations and Member States.

Thus, the report captures all that has been achieved and preserves it for the purpose of record and reference. By implication, it also shows shortfalls and unrealized potentials, providing an impetus for improvement and rectification, where necessary.

This Annual Report presents a veritable picture of COMSATS' strengths as part of the comity of organizations dedicated to the cause of socio-economic development through promotion of Science and Technology. However, it is pertinent to mention that COMSATS is a voluntary organization depending on minimal funds from the host country and non-obligatory Annual Membership Contribution from its Member States. Consequently, there are certain limits of its operations. Primarily, its scope of activities is limited to facilitation of South-South Cooperation rather than funding of S&T projects.

The facilitation role that COMSATS played through various innovative means is manifested by the fact that 15 technical events benefiting more than 600 scientists were organized and six events by partner organizations were sponsored during the course of the calendar year 2015. The multiple options available to Member States and the Network of Centres of Excellence for achieving their developmental targets through COMSATS' administrative infrastructure are quite well-known. The extent to which the stakeholders are benefited depends on their eagerness to engage with



COMSATS Secretariat and its worldwide Network of S&T Centres of Excellence.

Some of the salient aspects of COMSATS' reported activities during 2015 are worth noting, for example:

- i) the organization has successfully navigated through the process of reformulating its Statutes, thereby putting it on firmer legal grounds;
- ii) the apex meetings of the Commission (renamed as COMSATS General Meetings) have attained regularity of stipulated triennial frequency;
- iii) the constitution of and initial inputs in the COMSATS Endowment Fund have kickstarted a process that will hopefully put the organization on a secure financial footing;
- iv) the COMSATS' five-yearly strategy is being pursued consistently.

It is my pleasure to acknowledge with gratitude all the support that we have received from our Member States and international partners for the efforts aimed at improvement of S&T sectors in developing countries. In particular, I wish to acknowledge with respectful thanks the willingness of Honourable Chairperson of COMSATS, H.E. Dr. John Dramani Mahama, to continue his leadership of COMSATS for the second term. The words of encouragement and recognition of COMSATS' role in the promotion of South-South cooperation expressed in the message of His Excellency delivered during the 3rd General Meeting of the Commission are indeed a source of inspiration for all of us. The administrative and financial contribution of the Government of Ghana and its Ministry of Environment, Science, Technology and Innovation is gratefully acknowledged for successful organization of the 3rd General Meeting of the Commission and the 3rd Consultative Committee Meeting. The Government of Pakistan is to be lauded for its firm commitment to keep the platform of COMSATS effective and vibrant for the facilitation of South-South cooperation in disciplines of Science and Technology that are crucial for socio-economic development.

COMSATS Secretariat has been closely following the progress of Millennium Development Goals (MDG) in its Member Countries. With the closure of MDG in 2015, the next phase comprising of 15-year plan of Sustainable Development Goals (SDG) are now the object of focus worldwide. Along with major players, COMSATS will keep its sights on SDG and extend synergetic cooperation to all relevant fora, in this respect.

The core team of COMSATS Secretariat comprising of less than a dozen dedicated workers has been doing a remarkable job in pursuit of COMSATS' mission, for which they deserve unstinted commendation from COMSATS' community. The publication team is congratulated for bringing out this comprehensive document in an impressive get-up.

Dr. Imtinan Elahi Qureshi
Executive Director COMSATS

LETTER FROM THE CHAIRPERSON CONSULTATIVE COMMITTEE

It has become commonplace to say that we are living today in a global village. The statement is certainly a truism, in view of the surprisingly enhanced level of connectivity, enabled through the revolution in information and communication technologies, as well as the free flow of capital and trade across national boundaries. However, such a statement does gloss over the aspect of growing economic disparities, which have been further accentuated by the widening technological schisms between the developed and developing countries. In this backdrop, the importance of organizations like COMSATS, aiming at promoting multi-lateral and bilateral cooperation amongst the developing countries, has become even more relevant than before.



COMSATS' agenda is quite pragmatic as it takes into account the scientifically and technologically deficient areas in developing countries to bring them together for mutually beneficial initiatives, based on their indigenous strengths. It is, therefore, a matter of pride for Pakistan to be hosting Secretariat of the organization, in Islamabad, since its inception. The support provided to COMSATS is reflective of Pakistan's strong commitment to regional and international collaborative arrangements, particularly in the field of Science and Technology.

I had the privilege to preside over the meeting of the Consultative Committee, which is an important statutory body of the COMSATS, on the sidelines of COMSATS' 3rd General Meeting, held in Accra, in October 2015. It was pleasant to note that all the COMSATS' Member States were enthusiastically committed to achieve the objectives of this Organization. The country delegates extended their assurances in these meetings for significantly contributing towards enhancing mutual cooperation in Science and Technology.

The 3rd General Meeting of COMSATS was also special in that two new members, viz. Morocco and Palestine, formally joined the Organization. I am sure their presence and cooperation would add to the vibrance of this organization.

In conclusion, I would like to congratulate Executive Director COMSATS and his team at the Secretariat, on the completion of another successful year and wish them well in future endeavours to promote South-South cooperation in the areas of Science and Technology.

Mr. Fazal Abbas Maken
Chairperson COMSATS Consultative Committee &
Secretary, Ministry of Science and Technology
Government of Pakistan



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LETTER FROM THE CHAIRPERSON COORDINATING COUNCIL

In my capacity as Chairperson of COMSATS Coordinating Council, I want to, first, express my sincere gratitude to Industrial Technology Institute (ITI) and the Government of Sri Lanka for their support in the organization of the 18th Meeting of COMSATS Coordinating Council held in Colombo in May 2015 and for the wonderful hospitality of that beautiful country.

The first part of the Annual Report summarizes the meetings of the governing bodies of COMSATS held during the year, in particular the third General Meeting and the third Consultative Committee Meeting that took place in Accra, Ghana, as well as the Coordinating Council meeting in Sri Lanka, hosted by ITI.



A very important set of activities of COMSATS during the year was the Science and Technology events jointly organized, which covered a wide range of topics in basic and applied sciences. These events include Conferences, Workshops and Symposia on subjects of great relevance to developing countries, such as Intellectual Property, Internet Security, Agriculture and Climate Change, South-South cooperation, and Food Security. Many of these topics also relate to the activities of COMSATS International Thematic Research Groups (ITRGs). The report aptly covers these activities, including that of the new Group on Mathematical Modelling, coordinated by the National Mathematical Centre (NMC), Nigeria.

Another relevant aspect of the activity of the Secretariat are the technical cooperation with international scientific organizations, such as UNESCO, TWAS, ISESCO and SESRIC that are essential for the consolidation of COMSATS as one of the leading scientific institutions in the Third World.

The report also summarizes the work done by the members of the Network of Centres of Excellence, showing the extraordinary variety of their activities and the great potential they have for the promotion of international cooperation and scientific and technological development in our nations.

Despite all the political and economic problems that our countries face today, I am convinced that the only guarantee of a long-term growth is the strengthening of education, and Science and Technology. Science-based industrial and agricultural development is the only way to ensure a competitive and stable economy.

I would like to express my deepest congratulations to the Executive Director of COMSATS, Dr. I. E. Qureshi, and his fellow colleagues from the Secretariat for the



excellent organization of the 18th Coordinating Council Meeting last year, and for their tireless contribution to the consolidation of COMSATS.

Dr. Eduardo Posada Flórez

Chairperson COMSATS Coordinating Council &
Director International Centre
for Physics (CIF), Colombia



1

ACTIVITIES OF COMSATS' STATUTORY BODIES

- 3rd General Meeting of COMSATS 02
- 3rd Meeting of COMSATS Consultative Committee 16
- 18th Meeting of COMSATS Coordinating Council 22
- 37th & 38th Meetings of COMSATS Management Committee 30

The Commission is the highest forum of COMSATS, with Heads of State/Government of COMSATS twenty-three Member States comprising its membership. The first General Meeting of the Commission was held in 1994 that led to the establishment of COMSATS. The 2nd and 3rd General Meetings were held in April 2012 (Islamabad, Pakistan) and October 2015 (Accra, Ghana), respectively, at the level of Ministers nominated by the Heads of State/Government.

3RD GENERAL MEETING OF COMSATS

The General Meetings of COMSATS' Commission provide the organization the highest level patronage from Member States for its international programmes in pursuit of the statutory functions, especially viz. sensitizing the countries of the South to the centrality of science and technology in the development process, and mobilizing necessary financial support to supplement funding for S&T projects and activities in the South. In keeping with the mandate given in the relevant clause of COMSATS' establishment agreement, COMSATS' Commission met as per schedule after a period of three years at the 3rd General Meeting, in Accra, Ghana, on 27th to 28th October 2015.

Holding of the General Meeting is an onerous activity that involves a lot of coordination within the host country of the Secretariat, Pakistan, the convening



Inaugural session of the 3rd General Meeting of COMSATS being presided over by Hon. Elvis Afriyie-Ankrah, Minister of State at the Office of the President of Ghana

chair to Ghana, during the 2nd General Meeting of COMSATS held in Islamabad (April 2012), Dr. John Dramani Mahama, President of Ghana, was to convene the meeting in his capacity as the Chairperson COMSATS. Consultations, in this regard, had been initiated in June 2014, when the Executive Director COMSATS, Dr. I. E. Qureshi, called upon President Mahama at his office in Accra. In his first meeting with the Chairperson, Dr. Qureshi briefed him about COMSATS and sought his advice on a number of matters relevant to the future activities of COMSATS. Holding of the 3rd General Meeting topped the list.

Appreciative of the performance and achievements of COMSATS over the years, President Mahama issued directives for holding of the Meeting in 2015. Ghanaian Ministry of Foreign Affairs was immediately engaged in vetting of the relevant correspondence to be made from the office of the Chairperson to his counterparts in other Member States. Thereafter, COMSATS Secretariat maintained close coordination with the Focal Ministry in Ghana, Ministry of Environment, Science, Technology and Innovation (MESTI). After consistent efforts of around 16 months by COMSATS Secretariat in coordination with the host, Government of Ghana, the Meeting was successfully held during the last quarter of 2015.



Executive Director COMSATS giving a briefing to the Chairperson COMSATS in Accra

The Meeting resulted in revitalizing the trust of the Member States in COMSATS as an international forum of cooperation for S&T-led development, and support for its international programmes and activities. Some significant outcomes of the meeting included:

- Approval of the harmonized Statutes of COMSATS;
- Approval of Rules and Regulations for COMSATS' Endowment Fund;
- Re-adoption of COMSATS' existing strategy for the next five years (2016-2020);
- Re-election of President Mahama as COMSATS Chairperson for next three years; and
- Mutual offers of support in various fields of science and technology.

Pre-meeting Arrangements

The host country of COMSATS Secretariat has a vital role in successful convening of the statutory body meetings. After appositely holding the 2nd General Meeting in Islamabad, in 2012, the Government of Pakistan, through its Ministry of Science and Technology (MoST) and Ministry of Foreign Affairs (MoFA) provided due support for the organization of the 3rd General Meeting, in Accra.

Meetings and consultations made with high-level officials of the Government of Pakistan in this regard, included the briefing to Mr. Fazal Abbas Maken who had recently become the ex-officio Chairman of the COMSATS Consultative Committee

after assuming the charge as Federal Secretary, Ministry of Science and Technology (MoST), Government of Pakistan. In the said meeting held at COMSATS Secretariat on 26th August 2015, Mr. Maken was detailed on the mandate, scope and programmes of COMSATS and the importance of the then upcoming COMSATS' 3rd General Meeting and 3rd Consultative Committee Meeting (details in Section 5). The meeting resulted in a stronger support and goodwill from the MoST for suitably executing various administrative activities in particular for the Committee Meeting.

In January 2015, the Ghanaian Government constituted a high-level Planning Committee in order to effectively manage preparation for the two statutory meetings of COMSATS in Accra. The Committee, headed by Hon. Rashid Pelpuo, Minister of State at the Office of the President in-charge of Private Sector Development & Public-Private Partnerships, had members from MESTI, Ghana Immigration Service, Ghana Atomic Energy Commission, Centre for Scientific and Industrial Research (CSIR), Ministry of Foreign Affairs and Regional Integration, and State Protocol Department.

After months of coordination between the Ghanaian Focal Ministry and COMSATS Secretariat, the Advisor (Programmes) COMSATS, Mr. Tajammul Hussain, visited Ghana in August 2015 to review the organizational arrangements for the two meetings. Mr. Hussain attended two meetings of the Planning Committee on 10th and 14th August 2015. Other participants of the meeting were: Dr. Yahuza Mohammed Gomda, Director (Science, Technology and Innovation), MESTI; Dr. Eugene Atiemo, Director, Building and Road Research Institute (BRRI); Prof. Innocent J. K. Aboh, Deputy Director General, Ghana Atomic Energy Commission; Mr. Marcus Addo, State Protocol Department; Ms. Adelaide A. Asante, Acting Deputy Director (STI), MESTI; and Mr. J.K. Arthur, Research Scientist, MESTI.



First meeting of the Planning Committee of 3rd General Meeting, Accra

During the first meeting of the Planning Committee, Mr. Hussain was apprised about the progress made so far; which included dispatch of invitation letters from the office of the honourable President of Ghana to his counterparts in COMSATS' Member States in June 2015. With regard to the official documents of the Meeting, it was noted that COMSATS' Ghanaian Centre of Excellence, the Council for Scientific and Industrial Research (CSIR), would prepare a document titled 'Information Guide and S&T Panorama of Ghana'. While all other documents would be prepared by COMSATS Secretariat. Matters related to the venue, budget and other administrative arrangements for the meetings were taken up by the Planning Committee in its second meeting that concluded with a resolve to strongly follow-up all the administrative matters.

On behalf of COMSATS Secretariat, these matters were followed up by Mr. Nisar Ahmad, Deputy Director (Systems), COMSATS, who visited Ghana prior to the Meeting in connection with the Workshop on Repair and Maintenance of Scientific

Instruments, organized by COMSATS in Accra (details in Section 3).

Ambassadorial Dinner (October 5, 2015)

In order to apprise the envoys of the foreign missions of COMSATS' Member States in Islamabad about the 3rd General Meeting and the 3rd Consultative Committee Meeting, a dinner meeting was held in the capital city of Pakistan, on 5th October 2015. Representatives of 13 diplomatic missions in Pakistan, belonging to Bangladesh, China, Egypt, Ghana, Iran, Jordan, Kazakhstan, Korea (DPR), Morocco, Nigeria, Sri Lanka, Syria, and Tunisia, attended the dinner meeting. H.E. Mr. Rana Tanveer Hussain (Minister), and Mr. Fazal Abbas Maken (Federal Secretary), represented COMSATS' Focal Ministry in Pakistan, the Ministry of Science and Technology. Also present on the occasion were other senior officials of MoST, MoFA, COMSATS Secretariat and COMSATS Institute of Information Technology (CIIT), as well as members of local print and electronic media community. The officials were informed about the preparations and expected outcomes of the statutory meetings. Support of the relevant diplomatic missions was sought for ensuring strong participation from their countries.

An important highlight of the event was the signing of COMSATS Accession Agreement by the Ambassador of the State of Palestine to Pakistan, H.E. Mr. Walid Abu Ali on behalf of his Government (details in Section 2).



Dinner meeting with envoys of COMSATS' Member States in Islamabad

The 3rd General Meeting

The 3rd General Meeting of COMSATS was successfully held on 27th-28th October 2015, in Accra, Ghana. The meeting was held at the level of senior officials appointed by the Heads of Member States, and was attended by country delegates from the following 17 countries: China, Egypt, Ghana, Iran, Kazakhstan, Morocco, Nigeria, Palestine, Philippines, Pakistan, Senegal, Sri Lanka, Sudan, Tunisia, Turkey, Uganda and Zimbabwe.

Proceedings of the First Day of the Meeting (27th October 2015)

Hon. Elvis Afriyie-Ankrah, Minister of State at the Office of the President of Ghana, inaugurated the meeting on 27th October 2015. Apart from the delegates, the inaugural ceremony was attended by about 80 senior officials from the Flagstaff





House, Accra, relevant ministries and departments; representatives of foreign missions in Ghana; senior officials of Ghanaian R&D/S&T organizations and higher education institutions; and local media personnel; as well as officials from COMSATS Secretariat. Also present at the ceremony was Hon. Dr. Alfred Sugri Tia, Ghanaian Deputy Minister for Environment, Science, Technology and Innovation.

During the inaugural ceremony, the Minister of State read out the address of the honourable President of Ghana, who appreciated the presence of the country delegates in Accra. His Excellency termed COMSATS as a unique and admirable initiative created by developing countries themselves for self-help in S&T-led socio-economic development. He considered the Network of International S&T Centres of Excellence, comprising 20 affiliated R&D organizations, a distinctive feature of COMSATS. He urged all Member States to enhance their mutual cooperation and redouble efforts for the development of their S&T sectors, with greater spending on S&T projects and increased levels of financial and academic support towards South-South cooperation. In this regard, he encouraged them to make maximum use of COMSATS. He appreciatively acknowledged the effectiveness of COMSATS' programmes, COMSATS Secretariat's role in managing and coordinating these programmes, and the Government of Pakistan's patronage towards the Secretariat of the Commission. He noted that all Member States, including Ghana, have greatly benefitted from the organization during the period of over two decades, due to which it is in the self-interest of the Member States to provide COMSATS' maximum financial support.

".... COMSATS and other similar organizations are no doubt working hard to project what should have been obvious to all; namely, the quintessential requirement of developing science and technology to bring about economic progress... As the Chairperson of COMSATS, I call on all Member States to improve their cooperation with one another and redouble their efforts at the development of science and technology. This would require greater spending on the matter at home and an increased level of financial support towards South-South cooperation."

(Inaugural Address of the Chairperson COMSATS, H.E. Dr. John Dramani Mahama, read out by Mr. Elvis Afriyie-Ankrah, Minister of State, Office of the President of Ghana)

"...Ghana highly values COMSATS as an organization of the countries of the South that promotes interdependence and self-reliance... The Government of Ghana is focused on its 'Agenda for Transformation', which inter alia calls for adopting new and innovative ways of doing things, drawing on the power of science and technology to diagnose and solve problems... The country welcomes S&T led South-South cooperation and pledges to play its due role for the benefit of other Member States."

(Welcome Address by the Minister for Environment, ST&I, Hon. Mahama Ayariga)





Earlier, H.E. Mr. Mahama Ayariga, Minister for Environment, Science, Technology and Innovation, Government of Ghana, welcomed the delegates to Ghana and wished them productive deliberations during the Meeting. He acknowledged COMSATS' efforts for promoting peace and prosperity in the Member States by facilitating South-South cooperation in science and technology. He informed that Ghana is a member of various regional and international organizations, and is committed to actively participate in the international activities of COMSATS.

In his Introductory Remarks, the Executive Director COMSATS, Dr. I. E. Qureshi, highlighted the unique features of COMSATS; such as, a Network of International Centres of Excellence employing over 15,000 scientists; an associated university with more than 3,000 faculty members; and a comprehensive scheme of Technical Cooperation among Developing Countries (TCDC) in the form of 'International Thematic Research Groups'. He urged the Member States to help COMSATS' affiliated R&D organizations and universities come at par with the best international centres of the world. He argued that investment in S&T infrastructure pays back manifold in the form of socio-economic progress. Therefore, any financial support to COMSATS gets value-added returns for the contributing Member States.

"...COMSATS is not just an organization; it is also a movement – a movement that derives its inspiration from the trail blazing leaders of the Third World independence struggles, such as Toussaint L'Ouverture of Haiti, Kwame Nkrumah of Ghana, Dr. Mohammad Mossadeq of Iran. What these revolutionaries had in common, was a strong belief that all people in every unified region of the world should have control over their lives, their ways of life and their indigenous resources... developing countries should have the capacity to plan and execute the cooperation instruments, the way they believe is best suited to them. This is the philosophy that led to the creation of COMSATS."

(Introductory Remarks by Executive Director COMSATS, Dr. I.E. Qureshi)

The Chairman Consultative Committee, Mr. Fazal Abbas Maken, in his remarks, reported the successful holding of the 3rd Meeting of COMSATS Consultative Committee the previous day, and appreciated the excellent arrangements made by the Ministry of Environment, Science, Technology and Innovation (MESTI) and the meticulous work of COMSATS Secretariat for the meeting. He pointed out historical commonality among developing countries that passed through an era of colonization and subsequent independence followed by political upheavals, and noted some key economic and development statistics of Pakistan. He observed that the establishment of COMSATS was an important development that reflects the commitment of the Government of Pakistan to S&T-led development of the global South. Noting COMSATS' projects in Pakistan related to health, education and information technology, he termed the organization a good investment that paid back manifold. In this regard, he highlighted COMSATS' assistance in the development of the current ST&I policy of Pakistan.

".... I consider the establishment of COMSATS as one of the bright spots of the vision of political leadership in Pakistan. It reflects the commitment of the Government of Pakistan to give S&T its due share in national development strategy, and also to let Pakistan play a role for the development of other fellow countries belonging to the global South.... COMSATS Secretariat was helpful when we (Pakistan) needed to prepare a new S&T policy document in 2011. A broader perspective of what is happening in other countries enabled us to absorb some of the novel elements of policies in other developing countries in our policy document."

(Remarks by Chairperson of COMSATS Consultative Committee, Mr. Fazal Abbas Maken)





Day 1: Technical session of the General Meeting in progress

A highlight of the inaugural ceremony was the presentation of certificates to 14 scientists of the Ghanaian Atomic Energy Commission, who had benefitted from the Workshop on Repair and Maintenance of Scientific Instruments, organized by COMSATS in Accra, from 12th to 16th October 2015 (details in Section 3).

The technical sessions of the Meeting started with the elections of Vice Chairperson, Rapporteur-General, and organization of work for the Meeting.

The Executive Director COMSATS made a presentation entitled 'Overview of COMSATS' Activities and Future Plans' that covered the activities of COMSATS since its 2nd General Meeting held in Islamabad in April 2012. The Report highlighted numerous initiatives taken by COMSATS, during the intervening period, in the light of COMSATS' five-year strategy (2012-16). He also shared in detail the efforts made by COMSATS Secretariat for the establishment of COMSATS' Endowment Fund. The delegates appreciated the efforts and praised the initiatives taken by COMSATS for science-led socio-economic progress of the Member States during the period. The Executive Director's efforts and leadership for pursuing COMSATS' developmental initiatives and ensuring financial sustenance from all possible sources were also lauded.

The presentation by the Executive Director was followed by Country Statements by the Heads of 15 country delegations, who highlighted the various initiatives taken by their respective governments in the field of science and

Elected Vice-Chairperson of the Meeting

- H.E. Babikir Elsiddig Mohamed Elamin, Ambassador of Sudan to Ghana

Rapporteur-General

- Prof. Hosam El-Sayed, Assistant Vice President for Research, National Research Centre, Egypt

Bureau Members

- Mr. Fazal Abbas Maken, Federal Secretary, Ministry of Science and Technology, Government of Pakistan
- Ms. Wijaludchumi Ramesh, Secretary, Ministry of Science, Technology and Research, Government of Sri Lanka
- Delegate from Ghana

Member Drafting Committee

- Air Commodore I. G. Dumba, Principal Director, Higher and Tertiary Education, Science and Technology Development, Government of Zimbabwe

Session-I (Part 1) Chair

- Hon. Dr. Alfred Sugri Tia, Deputy Minister for Environment, Science, Technology and Innovation, Government of Ghana

Session-I (Part 2) Chair

- Prof. Dr. Victor Agyeman, Director-General, Council for Scientific and Industrial Research (CSIR), Ghana

Session-II & III Chair

- H.E. Babikir Elsiddig Mohamed Elamin, Ambassador of Sudan to Ghana

technology and shared their future aspirations in the light of their national priorities. The intersecting points in these country statements were as follows:

- The assertion that Science and Technology (S&T) is the key to success and the vehicle to secure fast-track, socio-economic development and cooperation in research and development in frontier science;
- The provision of an overview of these countries' scientific and technological activities in relevant institutions and research organizations;
- The expression of commitment and support to COMSATS' international and regional programmes and projects.

During the country statements, Member States' focus on Science and Technology, their stance on international collaboration, expectations from COMSATS and expression of commitments, were presented by the respective heads of delegations. Some of the salient points from the statements are as follows:



H.E. Babikir E. M. Elamin, Ambassador of Sudan to Ghana, steering the 2nd technical session of the General Meeting

China

- China shared its intension of carrying out an initiative entitled 'Six 100s' in the coming five years. The initiative will have programmes under six categories relating to poverty, agriculture, trade, environment, healthcare and education.
- The country plans to set up an Academy of South-South Cooperation and Development, and a South-South Cooperation Fund on Climate Change.
- It pledged the continuity of financial contribution to COMSATS on the basis of existing cooperation.

Egypt

- Egypt is focusing on short-term research plans in four main areas of: water, renewable energy, health and agriculture.
- It was suggested that the Egyptian Fund for Technical Cooperation with Africa, Egyptian Fund for Technical Cooperation with Commonwealth Countries, and Egyptian Science and Technology Development Fund (STDF) may be utilized for initiating collaboration programmes between S&T institutions of Egypt and other COMSATS' Member States.

Ghana

- Ghana is focused on its agenda of transformation and requires the support of other developing countries in its strides for growth and development.
- The international forums and programmes of COMSATS provide Ghana the opportunity to learn and reflect, especially for inculcating science and technology in the national development agenda.
- The country welcomes S&T-led South-South cooperation and pledges to play its due role for the benefit of other Member States.

Kazakhstan

- Kazakhstan's State Programme of Industrial and Innovative Development for 2015-2019, has been developed in accordance with the long-term priorities of the 'Kazakhstan-2050' Strategy. The Programme aims to stimulate diversification and improve competitiveness of the manufacturing industry of the country through establishing Oil and Gas Complex, as well as Metallurgical Complex, and focusing on ICT and Space Technology, Green Industry, Food Industry, Green Energy and pharmaceuticals.
- Kazakhstan expressed readiness to collaborate with other Member States in the areas of ICTs, nanotechnologies and materials science, alternative energy and energy-efficient technologies, biotechnology, biomedicine, pharmaceuticals, space technologies, and social research.

Morocco

- Morocco showed its keenness to play an active role as a new Member State of COMSATS and to benefit from the scholarship offers by some of the COMSATS' Centres of Excellence.
- Moroccan S&T institutions can benefit from various initiatives of COMSATS, including the International Thematic Research Groups, Distinguished Professorship Scheme, as well as capacity-building and knowledge-sharing activities.

Nigeria

- Nigeria envisions to become one of the acknowledged leaders of scientifically and technologically developed nations of the world through the flagship programmes of its Federal Ministry of Science and Technology, focused on biotechnology, ICTs, space technology, power and nuclear technology, engineering infrastructure.
- It pledged that the relevant authorities of Nigeria will be sensitized regarding the benefits of making Annual Membership Contribution to COMSATS.

Palestine

- Palestine has a strong focus on higher education and scientific research, aimed at industrial growth, and has established various Centres of Excellence with the support of private sector and donor organizations/countries.
- The State urged COMSATS to initiate global and regional level scientific projects; play advocacy role for funding for these projects; disseminate scientific knowledge; define public policies for poverty eradication; facilitate the exchange of technological knowledge and information; and facilitate technical assistance and cooperation among developing countries.

Pakistan

- Pakistan's Vision 2025 and the 11th Five Year Development Plan are aimed at transforming the country into an industrialized and knowledge-based high-income state by 2025. A number of sectoral policies are being pursued towards this vision, which recognize investment in human resources and strengthening of S&T institutions as critical elements for the country's socio-economic development.
- The country considered the joined research projects being undertaken by the International Thematic Research Groups (ITRGs) as closely related to the common national interests, such as environment, food security, health,



Participants of the meeting during a technical session

- information technology, and renewable energy.
- The country reiterated the offers of scholarships, short-term trainings (on reciprocal basis) and exchange of scientists to the Member States at its public-sector university, CIIT.
- The country sought collaboration from other Members States of COMSATS in setting up: advanced PV technologies; low-cost energy efficient and earthquake-resistant housing; sharing of knowledge and expertise in development of S&T Parks; and mutual recognition of quality standards, accreditation and conformity assessments.

Philippines

- Philippines acknowledged the ongoing contributions being made by COMSATS towards facilitating socio-economic development of Member States. It also showed its committed to actively participate in the activities of COMSATS, and designate a local S&T institution to join COMSATS Network of Centres of Excellence.

Senegal

- Senegal is re-orienting its education system towards technology, science, engineering and mathematics, as well as establishing new professional higher education institutions, which include 14 higher institutes of professional education, 2 thematic universities in agriculture and technology, and 40 digital resources of open space learning (OSL) throughout the country.
- The country is establishing General Directorate for Research having the following 4 directions: scientific culture, valorization of research results, innovation and financing and has also initiated programmes for the promotion of women researchers. The reforms also include establishing a structure for accreditation research laboratories; establishment of 100 experimental laboratories in all public universities; and re-orienting the education and training as per economic needs.
- The country is engaged in the development of ST&I in Africa through a number of bilateral and multilateral arrangements; Senegal hosts two of the World Bank supported university-based Centres of Excellence.

**Sri Lanka**

- The Government of Sri Lanka is committed to create conducive environment for harnessing Science, Technology and Innovation (ST&I) in the country.
- The country is in the process of re-orienting its national research and innovation system comprising of 41 research institutions, 17 universities and several private sector ventures.
- The Coordinating Secretariat for Science Technology and Innovation (COSTI) of Sri Lanka provides the necessary platform for joint efforts focused on achieving sustainable development goals.
- Sri Lanka urged COMSATS to play a catalytic role in sensitizing the political leaders of the Member States regarding the importance of Science and Technology and Innovation in attaining sustainable development goals.

Sudan

- Sudan recognizes the importance of scientific research for its socio-economic development. The country is keen to collaborate with other developing countries for technologies related to agriculture, food security and natural resources.

Tunisia

- Tunisia is making efforts to improve the state of health and education of its populations, and aspires to develop partnerships with other Member States in this regard.
- The country encouraged the Member States to promote COMSATS in their regions to enhance the scope and impact of the South-South cooperation programmes of the organization.

Turkey

- Turkey offers a number of scholarship opportunities for higher education and post-doctoral research, as well as supports international bilateral research and development programmes pertaining to academia and industry, which are also available for COMSATS' Member States.

Uganda

- The Government of Uganda is making focused efforts towards the development of ST&I in the country. The judicious application of ST&I is the catalyst that can improve Uganda's middle income status by 2040. In order to achieve this, the country partakes in international initiatives geared towards promoting S&T cooperation.
- Uganda has a lot to gain from the South-South cooperation, an opportunity that COMSATS is providing through its various fora.
- The Government of Uganda has set aside US\$14 Million to promote ST&I initiatives in the country.
- Uganda pledged to designate an S&T institution to participate in the activities of the Network of Centres of Excellence.

Zimbabwe

- Zimbabwe is fully committed to the founding values and objectives of COMSATS as it has embraced Science and Technology as the prime drivers of its socio-economic development.
- The country has made it mandatory for its higher education institutions to inculcate S&T activities in their programmes.

- Concrete plans have been made for the establishment of five new S&T universities, centres of excellence, technology centres, focusing on enhancing food security, mitigating climate change adversity, developing renewable energy technologies and alternative technologies through reverse engineering.

Proceedings of the Second Day of the Meeting (28th October 2015)

The Plenary Session-II commenced on the second day of the Meeting, 28th October 2015. An Open Forum was held for discussing South-South cooperation issues and COMSATS' future programmes. The delegates deliberated upon issues of mutual interest during the Forum. The need for preserving genome and biodiversity resources and safeguarding intellectual property rights of the developing countries was highlighted. In this regard, Turkey offered its help to other Member States of COMSATS for setting-up frameworks for the protection of their intellectual property rights. Moreover, keeping in view the fact that cyber security is an important global consideration in the wake of ever-increasing use of ICTs by organizations, businesses and general public, the establishment of a 'National Centre of Excellence in Cyber Security' in Pakistan was proposed. The Centre would have the objective of facilitating the Member States in building their capacities and formulating relevant laws, legislations and policies, with a view to reduce and eventually eliminate cyber crimes.

Discussions on the existing programmes of COMSATS helped garner Member States' pledges to join, and actively participate in the International Thematic Research Groups of COMSATS. The Member States also pledged to nominate relevant experts and scientists to join COMSATS' Panel of Experts on Science, Technology and Innovation Policy; COMSATS Distinguished Professorship Scheme; and Panel of COMSATS' Science Ambassadors. Pakistan invited other Member States to benefit from the experience of COMSATS Institute of Information Technology (CIIT), Pakistan, in setting up COMSATS Technology Park, as well as Incubation Centre.

The Plenary Session-III followed the Open Forum. The agenda-item concerning mobilization of financial resources for COMSATS was taken up and deliberated upon extensively. All the participants appreciated the Government of Pakistan for its generous and continued financial support to COMSATS Secretariat. They also praised the commitment of Pakistan for pledging financial support for COMSATS' future programmatic activities. The delegates resolved to sensitize their respective governments regarding the benefits of regularly making annual membership contributions for the financial sustainability of the organization. They also pledged to sensitize their Governments to mobilize funds for the COMSATS' Endowment Fund.

A major agenda-item of the meeting pertained to the approval of harmonized Statutes of COMSATS. Taking into account the efforts of COMSATS Secretariat for the same and after necessary deliberations, the Statutes of the organization were approved and adopted. It is pertinent to mention here that the Statutes had already been vetted by the 3rd Consultative Committee and the 18th Coordinating Council Meetings held during 2015. Under the agenda-item on election of a Chairperson of COMSATS, the Commission re-elected H.E. John Dramani Mahama, President of Ghana, as its Chairperson for the next three-year term. Earlier, the same had been proposed by country delegates from Ghana and supported by officials of Sudan.



Recommendations

The recommendations made during the Meeting included:

- i. COMSATS may strengthen linkages with the reputed higher education and research institutions in the developing countries, in order to provide greater opportunities of graduate scholarships, doctoral fellowships, and short-term trainings to Member States.
- ii. COMSATS may continue to collaborate with the international organizations having similar mandates and visions for jointly addressing the socio-economic needs of the developing countries. Initiatives such as joint fellowship programmes, science popularization activities, and capacity-building activities, were proposed.
- iii. The Centres of Excellence of COMSATS may increase their interaction and cooperation with other member institutions of the Network, for programmes such as expert exchange, technology transfer, joint research, etc., in order to realize the objective of promoting South-South cooperation, being pursued by COMSATS.
- iv. The Member States are encouraged to increase the number of technology parks, in order to promote the culture of innovation, as well as to find solutions to the challenges faced by industries and businesses. The progress made in connection with the establishment of COMSATS Technology Park at CIIT, Pakistan, was noted with satisfaction. All Member States may benefit from the experience of China in establishing Technology Parks.
- v. The Member States are encouraged to establish strong communication channels with COMSATS Secretariat, in order to advise the organization regarding their scientific priorities and needs with a view to enhance the effectiveness of COMSATS' programmes and activities.
- vi. The Focal Point in Ghana may send a representative on secondment to COMSATS Secretariat and make arrangements for regular interactions between the Chief Director of MESTI and Executive Director of COMSATS through video conferencing, in order to provide effective liaison between the office of the Chairperson COMSATS in Accra and COMSATS Secretariat in Islamabad.
- vii. Decision was also taken regarding announcement of certain vacancies for nominees from Member States to be appointed at COMSATS Secretariat.

The Meeting concluded with the pledge by the Member States to strengthen their communication channels with COMSATS Secretariat, and to advise the organization regarding their scientific priorities and needs, with a view to enhance the effectiveness of COMSATS' programmes and activities.



Participants of the 3rd General Meeting of COMSATS

**Resolution Adopted in the 3rd General Meeting of the
Commission on Science and Technology for Sustainable Development in the South (COMSATS)
held in Accra, Ghana, on 27- 28 October 2015**

We, the participants of the Third General Meeting of COMSATS, representing Members of the Commission,

APPRECIATING the efforts of the Government of Ghana for hosting the Commission's Meeting in Accra;

REALIZING the importance of the application of Science and Technology for achievement of the sustainable development goals by the countries of the South;

RECOGNIZING the need to strengthen Scientific and Technological activities of the Commission in the light of new opportunities and challenges and to enhance its financial strength to achieve its objectives;

RENEWING the member countries' resolve and commitment to support the objectives of the Commission as contained in its harmonized Statutes approved by the Commission at its 3rd Meeting;

APPRECIATING the role of Commission's Network of Centres of Excellence and the Secretariat in the progress made so far for building S&T capacities of Member Countries through the mechanism of South-South cooperation;

COMMENDING the support provided by the Government of Pakistan to the Secretariat for successfully carrying out its international operations;

WELCOMING the re-election of the incumbent Chairperson of the Commission for the next three years;

hereby resolve as under:

1. **CONTINUE** extending full support to the Commission in its efforts to promote the integration of progress in the realm of Science and Technology into Member Countries' national and regional development plans for achieving rapid socio-economic development in the South;
2. **INCREASE** the allocation of funds for strengthening the Scientific and Technological capacities of respective countries and make full use of the collaborative forum of COMSATS in these efforts;
3. **STRENGTHEN** the role of Focal Points in ensuring the allocation of sufficient funds for the COMSATS' Centres of Excellence based in their own countries, to enable effective participation in COMSATS' programmes and activities and their transformation into International level Centres of Excellence;
4. **PROMOTE** the objectives and programmes of the Commission at national as well as international levels through diplomatic and other channels, and devise effective frameworks for disbursement of adequate financial contribution to COMSATS on voluntary basis;
5. **CONTRIBUTE** towards the COMSATS Endowment Fund of US\$ 20 Million launched during the 2nd Commission Meeting (Islamabad) and initiated by COMSATS Secretariat with a token deposit of US\$ 5,000 and PKR. 500,000 towards the Fund.
6. **FACILITATE** the exchange of scientists, engineers, technicians, educationists, scholars and experts amongst the relevant organizations of the Member Countries to strengthen the activities related to capacity-building and transfer of technology;
7. **FACILITATE** the continuity of the Commission's Meetings once every three years as stipulated in the Statutes and to convene the next meeting of the Commission in 2018;
8. **EXPRESS** solidarity with Member States who are subjected to external restrictions hampering the development of S&T sectors.

And urge the Executive Director of the Commission to:

9. **CONTINUE** making all efforts to achieve the objectives of the Commission with the support of the Governments of the Member Countries through respective focal points with the help of its Centres of Excellence;
10. **CONTINUE** the current strategy of COMSATS during the next five years, 2016-2020, with emphasis on technical cooperation projects employing, inter alia, the concept of International Thematic Research Groups in order to provide maximum socio-economic benefits to the Member Countries;
11. **INCREASE** efforts for elevating the S&T capacity and the international status of COMSATS affiliated Centres of Excellence;
12. **ENHANCE** the campaign for the expansion of the membership of the Commission and Centres of Excellence to achieve wider South-South cooperation;
13. **PREPARE** a comprehensive follow-up report on the relevant provisions of this resolution for presenting to the Commission at its next meeting.



The Consultative Committee comprises of national scientific Focal Points of 23 COMSATS' Member States. The Committee has the mandate to coordinate and supervise all affairs of the Commission and, in particular, those concerning the programmes and finances of the Commission. It also oversees matters, inter alia, relating to the formulation of the general policy of the Network; fund-raising efforts by the member institutions; and intake of new member institutions of the Network and their upgrading.

3RD MEETING OF COMSATS CONSULTATIVE COMMITTEE

The 3rd Meeting of COMSATS Consultative Committee was held on 26th October 2015, in conjunction with the 3rd General Meeting of COMSATS (27-28 October 2015). Hosted by the Ministry of Environment, Science, Technology and Innovation (MESTI), Government of Ghana, the Committee meeting was attended by the representatives of COMSATS' Focal Points in China, Egypt, Ghana, Iran, Kazakhstan, Morocco, Nigeria, Palestine, Philippines, Pakistan, Senegal, Sri Lanka, Sudan, Tunisia, Uganda and Zimbabwe, as well as Turkey. The Committee that met after 2 years, deliberated upon an eleven-point agenda during its two technical sessions.

Inauguration

The meeting was inaugurated by H.E. Mr. Mahama Ayariga, Minister for Environment, Science, Technology and Innovation, Government of Ghana. The inaugural session of the Consultative Committee Meeting included: Welcome Speech by Chief Director MESTI, Ms. Salimata Abdul-Salam; Introductory Remarks by Executive Director





COMSATS, Dr. I.E. Qureshi; Address by Chairperson COMSATS Consultative Committee and Federal Secretary for Science and Technology, Government of Pakistan, Mr. Fazal Abbas Maken; and Inaugural Address by the Ghanaian Minister for Environment, Science, Technology and Innovation, H.E. Mr. Mahama Ayariga.

During his inaugural address, the honourable Minister expressed pleasure on having the opportunity of hosting the two extremely important statutory body meetings of COMSATS in Ghana. He stated that Ghana places science, technology and innovation (ST&I) development high on its priority list, which is expected to contribute to the country's social and economic growth, as well as improve the quality of life of its people. A part of this commitment is the national ST&I Policy of Ghana, which was launched in March 2010 by the Ghanaian Ministry of Environment, Science, Technology and Innovation.

The Chairperson of COMSATS Consultative Committee expressed pleasure on the strong role being played by COMSATS for South-South Cooperation in various sectors of Science and Technology. Recalling the functions of the Consultative Committee, Mr. Maken noted that the Committee acts as a bridge between those who formulate S&T policies in the Member States and those who take actions under these policies. He urged the members of the Committee to ensure that

List of Participants **Third Consultative Committee Meeting of COMSATS** **Accra, Ghana (26th October 2015)**

- Mr. Wang Sheng, Counsellor, Embassy of People's Republic of China in Accra
- Prof. Hosam El-Sayed, Assistant Vice President for Research, National Research Centre, Egypt
- Ms. Salimata Abdul-Salam, Chief Director, Ministry of Environment, Science, Technology and Innovation (MESTI), Ghana
- Dr. Yahuza Mohammed Gomda, Director (Science, Technology and Innovation), MESTI, Ghana
- Prof. Dr. Victor Agyeman, Director-General, Council for Scientific and Industrial Research (CSIR), Ghana
- Dr. Eugene Atiemo, Director BRRI, CSIR, Ghana
- Mr. Seyed Reza Hosseini, Embassy of Iran in Accra
- Prof. Tlekkabul Ramazanov, Vice-Rector for Research and Innovative Affairs, Al-Farabi Kazakh National University (KazNU), Kazakhstan
- Mr. Ahmed Balafrej, Deputy Head of Mission, Embassy of Morocco in Accra
- Prof. Adewale Roland Tunde Solarin, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria
- Pharm. Abayoni Oguntunde, Director, Department of Bioresources Technology, Nigeria
- Dr. Anwar Hmeidat, Assistant Deputy Minister, Ministry of Education and Higher Education, Palestine
- Mr. Alex T. Quarmyne, Honorary Consul, Consulate of the Philippines in Accra
- Mr. Fazal Abbas Maken, Federal Secretary, Ministry of Science and Technology, Government of Pakistan, Pakistan
- Prof. Dr. Raheel Qamar, Dean of Research, Innovation & Commercialization, COMSATS Institute of Information Technology, Pakistan
- Mr. Asim Ali Khan, Third Secretary, High Commission of Pakistan in Accra
- Prof. Aminata Sall Diallo, In charge of Research and Cooperation, Ministry of Higher Education and Research, Senegal
- Mrs. Wijaludchumi Ramesh, Secretary, Ministry of Science, Technology and Research, Sri Lanka
- H.E. Babikir Elsiddig Mohamed Elamin, Ambassador, Embassy of Sudan in Accra
- Prof. Mohamed Ben Youssef, Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia
- Dr. Orkun Hasekioglu, Executive Vice President, The Scientific and Technological Research Council of Turkey (TUBITAK), Turkey
- Mr. Patrick Mafabi, Uganda National Council for Science and Technology (UNCST), Uganda
- Air Commodore I. G. Dumba, Principal Director, Higher and Tertiary Education, Science and Technology Development, Zimbabwe
- Dr. Imtihan Elahi Qureshi, Executive Director COMSATS, Pakistan
- Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, Pakistan
- Mr. Farhan Ansari, Sr. Assistant Director (Programmes) COMSATS, Pakistan
- Mr. Nisar Ahmad, Deputy Director (Systems) COMSATS, Pakistan





COMSATS' Centres of Excellence in their respective countries get sufficient governmental support to perform their role as per their national development agendas, as well as extend support in areas of their expertise to the Member States.

Earlier, the Executive Director COMSATS highlighted the functions of COMSATS' statutory bodies as well as the significance of the two meetings, while the Chief Director MESTI extended warm welcome to the foreign participants and country delegates.

Proceedings of the Technical Sessions

The first technical session started with the approval of agenda and appointment of the Meeting Rapporteurs. Mrs. Wijialudchumi Ramesh, Secretary, Ministry of Science, Technology and Research, Sri Lanka; and Prof. A.R.T. Solarin, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria, were appointed as Rapporteurs of the meeting.

At the beginning of its technical deliberations, the Meeting approved the minutes of the 2nd Meeting of COMSATS Consultative Committee (1st May 2013, Ghana) and



reviewed the implementation status of the decisions taken during the same. A presentation in this regard was made by Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS. The Committee showed satisfaction on the implementation status of the meeting. The Committee was also pleased to learn about the follow-up made by COMSATS Secretariat on the decisions of the 2nd General Meeting of COMSATS, held in Islamabad, in April 2012. A presentation in this regard was made by the Advisor (Programmes) COMSATS.

The Executive Director COMSATS made a detailed presentation on COMSATS' activities for the period May 2013 to October 2015, in the light of COMSATS Strategy (2012 - 2016). Based on the information given in the presentation, the Committee took stock of and showed satisfaction over the following:

- holding of 45 capacity-building events/meetings in Member Countries;
- launching of 2 new International Thematic Research Groups;
- initiation of new programmes, including COMSATS' Distinguished Professorship

Scheme; COMSATS' Panel of Experts on Science, Technology and Innovation Policy; COMSATS Technology Park; and COMSATS' Science Diplomacy Programme;

- postgraduate scholarships and fellowships at COMSATS' Centres of Excellence; and
- information dissemination through COMSATS' publications and web-portal.

The Committee highly appreciated the induction of two new Member States (the Kingdom of Morocco and the State of Palestine) and three Centres of Excellence: Industrial Technology Institute (ITI), Sri Lanka; Water Research and Technologies Centre (CERTE), Tunisia; and Al-Farabi Kazakh National University (KazNU), Kazakhstan, since the last meeting of the Committee in May 2013.

Country Statements by the delegates started during the first technical session and continued during the first part of the second session. These statements covered their respective governments' stance on S&T-led sustainable development and recommendations for enhancing the effectiveness of COMSATS' programmes and activities in its Member States. Representatives of Egypt, Iran, Kazakhstan, Morocco, Nigeria, Pakistan, Palestine, Senegal, Sri Lanka, Sudan, Turkey, Uganda, and Zimbabwe, presented their statements. Some salient points made in the statements were:

- Egypt will explore the possibility of establishing an Egypt-COMSATS research fund.
- Pakistan encouraged the Member States to benefit from the offers of scholarships and short-term trainings made by the COMSATS Institute of Information Technology (CIIT).
- Philippines, Uganda, Zimbabwe, Morocco and Palestine pledged to convey to the relevant authorities in their respective countries the need to designate one centre each to join COMSATS' Network of International S&T Centres of Excellence.





- Turkey encouraged the Member States to benefit from the scholarship programme of TUBITAK.
- Tunisia offered its water research expertise to COMSATS' Member States.

Later during the second technical session, the Committee endorsed the harmonized statutes that were to be presented to the Commission for approval at its 3rd General Meeting. The Committee also appreciated the efforts made by the officials of COMSATS Secretariat and Prof. M. H. A. Hassan, Lifetime Member of COMSATS Coordinating Council (Former Executive Director TWAS), with regard to the preparation of the draft Statutes of COMSATS.

Showing satisfaction over COMSATS' activities and programmes and the recent initiatives, the Committee agreed to re-adopt COMSATS Strategy (2012 - 2016) for the period 2016-2020.

An important outcome of the meeting was a strong recognition of the key role of the Focal Points of COMSATS towards securing the political support of the Member States' top leadership for the international programmes of the organization, as well as for mobilizing necessary financial support for COMSATS' Centres of Excellence in their respective countries. Establishment of COMSATS' Endowment Fund and ensuring financial support for COMSATS' programmes, constituted an important point of discussion. The meeting endorsed the Rules and Regulations of the Endowment Fund framed by COMSATS Secretariat. Considering the Endowment



Fund and Member States' Annual Membership contributions imperative for the organization's programmes, the participants of the meeting pledged to make efforts towards commencing or continuing regular payment of Annual Membership Contribution (AMC) by their respective governments.

Conclusion

Before its conclusion, the meeting vetted and endorsed the agenda of the 3rd General Meeting of COMSATS. Mrs. Wijialudchumi Ramesh, Secretary, Ministry of Science, Technology and Research, Sri Lanka, presented the Rapporteurs' Report, which was approved after deliberation and necessary amendments.



Group photo of the participants of COMSATS Consultative Committee

The Coordinating Council of COMSATS comprises of 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.

18TH MEETING OF COMSATS COORDINATING COUNCIL

In 2015, COMSATS' central platform for South-South technical cooperation, the Coordinating Council, continued its tradition of regularly holding its annual meetings. The 18th Meeting of the Council was held in Colombo, Sri Lanka, on May 12-13, 2015, and was hosted by COMSATS' Centre of Excellence in Sri Lanka, the Industrial Technology Institute (ITI), Colombo.

Inauguration

The meeting was inaugurated on May 12, 2015, by the Sri Lankan Minister for Higher Education & Research, H.E. Dr. Sarath Amunugama. The honourable Deputy Minister, Ministry of Higher Education and Research (MOHER), H.E. Dr. Sudarshani Fernandopulle, and the Secretary MOHER, Mr. P. Ranepura, also graced the occasion with their presence. In addition to the Council members and senior officials of ITI and COMSATS, the ceremony was attended by the representatives of the diplomatic missions of Pakistan, Nigeria, and Germany in Colombo; as well as the local universities, R&D institutions, ministries and government departments.

The Chairman ITI, Mr. Niroshana Perera, opened



A glimpse of the head table at the Council Meeting inauguration

the session with a welcome note to the foreign and local participants of the meeting. He informed that his country is fully aware of the importance of advancement in S&T for achieving socio-economic development. He thanked COMSATS for giving the opportunity to his Institute for hosting the 18th Council meeting, which he considered an effective way to promote international collaboration in different fields of Science & Technology.

"In spite of well-known statistics showing direct correlation between S&T capacity and economic performance, it continues to be a challenge for most of the developing countries to create credible R&D infrastructures that can lead to developing their industrial competitiveness in world markets....socio-economic development can be realized best through unity and mutual cooperation within the group of countries that are low on the scale of Human Development Index."

Dr. I. E. Qureshi, Executive Director COMSATS

The Executive Director COMSATS, Dr. I. E. Qureshi, thanked the honourable Minister for Higher Education & Research, Government of Sri Lanka, for sparing time to inaugurate the meeting, and considered his presence a reflection of Sri Lankan Government's policy to support international cooperation, especially in the field of Science and Technology. Dr. Qureshi informed that the stalemate, or partial progress, in the developing countries could be attributed to resource constraints, policy deficit or lack of political will. He noted that out of 187 countries listed in UNDP's Human Development Report (2014), there is no COMSATS' Member State in the group of 49

countries that fall in the category of 'Very High' Human Development Index (with values higher than 0.808). Only seven countries, he noted, fall within the index range of 0.7 – 0.79, which is considered as High HDI, with Sri Lanka on top of the list. He informed that the rest of 14 Member States have either medium or low HDI, which means that they have human development conditions that are far from satisfactory. Based on these facts, Dr. Qureshi opined

that the prosperity of the Member States depends on two major factors: (i) a commitment to allocate adequate resources for education and scientific capacity-building, at national level; and (ii) a strong policy of scientific cooperation on bilateral and multilateral bases, at international level.

Speaking on the occasion, the Chairperson of COMSATS Coordinating Council, Prof. Eduardo Posada F., Director Centro Internacional de Física (CIF), Colombia, shed light on some of the recent advancements in different fields of S&T, particularly information technology, manufacturing and transportation industries. Referring to these advancements as 'the new industrial revolution', he considered it

"Thanks to its international composition and the quality of member centres of its Network, COMSATS can play an instrumental role for bringing change in the developing world. We must direct all our efforts to strengthen COMSATS and improving its visibility and influence on the decision makers of the South."

Prof. Eduardo Posada F., Director Centro Internacional de Física (CIF), Colombia, and Chairman Coordinating Council





a unique opportunity for developing countries to leapfrog and improve their socio-economic conditions. He stated that the recent economic crisis in many countries due to the fall of oil prices has, once again, proved that a country cannot rely on the export of raw materials alone for its survival. He opined that the real treasure of a country is the talent of its people and its capacity to produce creative and innovative ideas. In this regard, he urged the developing countries to improve the quality of education at all levels, with emphasis on science and mathematics; and promote research in basic sciences as well as applied sciences oriented towards finding solutions to their problems and creating a strong and innovative industrial sector. Prof. Posada also highlighted some of the serious threats to the survival of mankind posed by global climate change, and called for drastic measures and enhanced international collaboration to mitigate its effects.

In his inaugural address, Dr. Amunugama stressed the need for stronger cooperation among developing countries for collectively overcoming challenges to their socio-economic development. The honourable Minister informed that Sri Lanka is one of the seven countries who have achieved most of the goals set out during the 'UN Summit on the Millennium Development Goals' held in New York. Dr. Amunugama urged the governments of the developing countries to identify their respective competitive advantages and make best utilization of the latest advancements in science and technology for increasing their productivity and high-technology exports. He stated that developing countries are blessed with a large human resource that should be provided opportunities of higher education and technical training in order to attract foreign investment. In this regard, he quoted the examples of China, India and Vietnam as some of the developing countries that have been able to enhance Foreign Direct Investment (FDI) by developing a pool of highly educated and skilled manpower.

The Sri Lankan Ministry for Higher Education & Research, attaches great importance to COMSATS as a platform for collaboration in various fields of Science and Technology, and assures of the Government's full support towards the activities of the organization.

H.E. Dr. Sarath Amunugama, Minister for Higher Education & Research, Govt. of Sri Lanka

Participants of the 18th Coordinating Council Meeting

- Dr. Parvin Noor, Director (In Charge) IGCRT, BCSIR, Bangladesh
- Prof. Lin Zhaohui, Director ICCES, China
- Dr. Eduardo Posada F., Director CIF, Colombia
- Prof. Dr. Ashraf Shaalan, President NRC, Egypt
- Prof. Hosam El-Sayed, Assistant Vice President for Research, NRC, Egypt
- Dr. Eugene Atiemo, Director BRRI, Ghana
- Dr. M. Molanejad, Acting President for International Cooperation, IROST, Iran
- Dr. Andrew Gerard Murray Pearson, Head of Department, The University of the West Indies, Jamaica
- Engr. Abeer Arafat, Manager of Communication and External Affairs, RSS, Jordan
- Dr. Haroon Rashid, Pro Rector CIIT, Pakistan
- Dr. Muditha Liyanagedara, Acting Director General ITI, Sri Lanka
- Dr. G.A. S. Premakumara, Research Fellow ITI, Sri Lanka
- Dr. Radhika Samarasekera, Additional Director General (Research & Development), ITI, Sri Lanka
- Dr. Widad Hassan Abdel Halim Hassan, Director General IRCC, Sudan
- Prof. Mkumbukwa Madundo Angelo Mtambo, Director General TIRDO, Tanzania
- Dr. Bahadır Tunaboylu, President TUBITAK MAM, Turkey
- Prof. Tlekkabul Ramazanov, Vice-Rector for Research and Innovative Affairs, KazNU, Kazakhstan
- Prof. Dr. M. H. A. Hassan, Former Executive Director TWAS, Italy
- Dr. Moctar Toure, Vice President, Academie Nationale Des Sciences Et Techniques Du Senegal (ANSTS), Senegal
- Prof. Khatijah Mohamad Yusoff, Dean, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, Malaysia
- Dr. Yoslan Nur, Programme Specialist, UNESCO, France
- Dr. I.E. Qureshi, Executive Director COMSATS, Pakistan
- Mr. Tajammul Hussain, Advisor (Programmes), COMSATS, Pakistan
- Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Pakistan



Technical Proceedings of the Council Meeting

The technical sessions of the meeting were presided over by Prof. Eduardo Posada F., Chairperson Coordinating Council and Director Centro Internacional de Física (CIF), Colombia, during which the meeting deliberated on an 11-point agenda. As per the standard format of the meeting, the Executive Director COMSATS presented COMSATS' Annual Activity Report (May 2014 – April 2015); and the Advisor (Programmes) COMSATS briefed the Council on the administrative and financial matters of COMSATS, as well as reviewed the implementation status of the decisions taken by the Council in its previous meeting.

The Heads/representatives of COMSATS' Centres of Excellence shared the updates on the scientific activities of their institutions with the view to identifying areas of cooperation. Some specific proposals of collaboration and exchange made by the Centres of Excellence were as follows:

- Offers of scholarships/fellowships were made/ restated by CIIT-Pakistan, ICCES-China, IROST-Iran, and TUBITAK MAM-Turkey.
- Trainings and scientific exchange offers were made by BCSIR-Bangladesh, CIF-Colombia, ITI-Sri Lanka, and TUBITAK MAM-Turkey.
- CIF offered to facilitate collaboration between ICCES-China, and the United Nations' International Research Centre on El Niño (CIIFEN), Ecuador, in the areas of mutual interest.
- ICCES-China invited other Council members to nominate suitable researchers for participating in the 14th CTWF International Training Workshop on 'Land-hydrological Model System and its Applications' (September 3-12, 2015, Beijing, China), while CIIT-Pakistan, sought nominations for participation in its next conference of the series 'Frontiers of Information Technology (FIT)'.
- Prof. Eduardo Posada, CIF-Colombia, offered to facilitate BRRI's collaboration with a Colombian Centre, which is working on bitumen technology. BRRI has existing collaboration with Colombia in the area of satellite imagery.
- BCSIR-Bangladesh invited TIRDO-Tanzania to explore avenues of mutual collaboration.
- The Centres of Excellence pledged to take necessary actions to benefit from the COMSATS' Distinguished Professorship Scheme and COMSATS' Panel of Experts on 'Science, Technology and Innovation Policy', as well as to serve as COMSATS' hub in their respective countries and geographical regions to

Scientific Disciplines Covered During Presentations by Centres of Excellence During the 18th Coordinating Council Meeting

- Health (infectious diseases; electro-physiology; biological control of mosquito-borne diseases and trace elements in animal/human tissue);
- Agriculture (biotechnology; applications of nanotechnology in agriculture and water resources);
- Applied Biosciences (bioequivalence studies; biomaterials; bio-chemicals; biofuel; bio-physics and bio-refinery);
- Climate and Environmental Sciences (dynamical earth system model; global dust cycle studies; soil analysis; minerals & mineralogy and chemical metrology);
- Energy (renewable energy and green buildings);
- Chemical and Material Sciences (chemical technology; environmental geochemistry; heavy metal pollution; mineral composition of food; bio-geochemical cycles; forensics; proficiency testing; materials and metallurgical science and engineering; Certified Reference Material (CRM) production and Proficiency;
- Testing/Inter-Laboratory Comparison (PT/ILC) development);
- Information Technology (chip designing and 3Dprinting); and
- Space Technology.



- enhance the visibility of COMSATS.
- Other Centres sought support of fellow Network members in their desired areas of cooperation.
- Dr. Yoslan Nur, UNESCO, France, offered UNESCO's support for the commercialization of research results of the Centres of Excellence.

During agenda-item on COMSATS International Thematic Research Groups (ITRGs) progress reports of two ITRGs on 'Climate Change and Environmental Protection' and 'Information and Communication Technologies' were presented to the Council by the representatives of their Lead Centres. The meeting also discussed matters related to identifying means of accelerating the pace of progress of the functional ITRGs, as well as the launching of remaining ITRGs, for achieving the desired objectives of the ITRG Programme. The Council was informed that two more ITRGs on 'Agriculture, Food Security and Biotechnology' (led by National Research Centre (NRC), Egypt) and 'Renewable Energy' (led by Iranian Research Organization for Science & Technology (IROST)-Iran) are scheduled to hold their foundation meetings during June and September 2015, respectively. NRC held the foundation meeting on 10th June 2015, however foundation meeting of the latter ITRG has now been rescheduled for August 2016.



Executive Director COMSATS making a presentation on COMSATS' Activities

Key Decisions of the Meeting

Based on the presentations made earlier by the Executive Director and Advisor (Programmes), COMSATS, Coordinating Council also showed satisfaction over COMSATS' undertakings during the preceding months, as well as on the administrative and financial affairs of COMSATS. During the meeting, the Coordinating Council took a number of important decisions. These included:

- Approval for the induction of Al-Farabi Kazakh National University (KazNU), Kazakhstan, in COMSATS' Network of International S&T Centres of Excellence in the light of: (i) the formal application received from the University; (ii) report of the two members of COMSATS Technical Advisory Committee (TAC) evaluating the technical facilities and infrastructure of the University on the basis of their visit to KazNU in April 2015; as well as (iii) a detailed presentation by the Vice-Rector for Research and Innovative Affairs, KazNU.
- Approval of some necessary revisions and amendments in the Charter of the Network for harmonizing it with the 'International Agreement to Establish COMSATS' to create a composite statutory document, the COMSATS Statutes; the Executive Director COMSATS was authorized to submit the consolidated



Chairperson Coordinating Council steering the 18th Council Meeting

Statutes for the approval of the 3rd General Meeting of COMSATS.

- Mandate given to the Executive Director COMSATS to sign an MoU between TWAS and COMSATS for collaboration in the field of Science Diplomacy.
- Approval of the proposed COMSATS' budget for 2015-16.

The Council acknowledged the financial and in-kind contributions to COMSATS by some Member States. The meeting issued a Communiqué that encourages the Centres of Excellence to: increase the number of collaborative research and development projects with other Centres of Excellence; make efforts for launching the remaining ITRGs; make maximum utilization of scholarships offered by China, Pakistan and Iran; keep COMSATS Secretariat aware of new developments or major achievements of their centres; encourage their researchers to submit scholarly scientific articles for publication in COMSATS' bi-annual journal, 'Science Vision'; as well as consider placement of their officers at COMSATS Secretariat on secondment.

Closing Ceremony

During the closing ceremony of the event, the Chairperson Coordinating Council, congratulated and thanked the Executive Director COMSATS and his team at COMSATS Secretariat for successfully organizing the 18th Coordinating Council meeting. He also thanked the organizing committee of ITI for the local arrangements and support during the proceedings of the meeting.

Prof. Posada expressed pleasure on the continuous expansion of COMSATS Network of International Centres of Excellence. He also thanked the honorary lifetime member of the Council, Prof. M.H.A. Hassan for his participation in the meeting.

The Executive Director COMSATS expressed gratitude to ITI for hosting the meeting and making excellent arrangements for the same. He thanked



(From R to L) Chairperson and Secretary of the Coordinating Council

Prof. M.H.A. Hassan for his participation in the meeting as well as his support in connection with the necessary amendments in the Charter of the Network and preparation of COMSATS Statutes. He also thanked the two TAC members, Dr. Moctar Toure and Prof. Khatijah M. Yusoff, for sparing time to participate in the meeting. The Executive Director also praised the tireless efforts of his team at COMSATS Secretariat for preparing the meeting documents and making other arrangements.

Excerpts from a Letter of Appreciation from Rector KazNU, Kazakhstan, Prof. Galimkair Mutanov, to the Executive Director COMSATS

"We are pleased to learn that Al-Farabi Kazkh National University has been accepted to COMSATS Network of Centres of Excellence... We realize the importance of mission entrusted to us and the responsibility of its fulfillment.... I would like to thank you for warm welcome and hospitality rendered to Prof. Tlekkabul Ramazanov at the 18th meeting of COMSATS Coordinating Council. (The) good impressions and positive reviews show respect and goodwill to our country."

On behalf of the local organizing committee, Dr. J.K.R.R. Samarasekara, Additional Director General (Research & Development), ITI, thanked the foreign delegates for traveling long distances in order to participate in the meeting. She acknowledged the support and guidance of the senior officials of the Ministry of Higher Education & Research, Government of Sri Lanka. She also thanked the local organizing committee members for their tireless efforts for organizing the meeting.



Group photo of the Members and participants of the 18th Council Meeting

The 19th meeting of the Coordinating Council will be hosted by the COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan.

**Communiqué of the
18th Coordinating Council Meeting of COMSATS
(12 - 13 May, 2015, Colombo, Sri Lanka)**

The participants of the 18th meeting of COMSATS Coordinating Council, comprising of thirteen Council Members or their representatives after having deliberated upon the eleven-point agenda of the meeting on 12-13 May 2015, are pleased to make the following joint statement:

1. The Members of COMSATS Coordinating Council highly appreciate the excellent arrangements made by the Industrial Technology Institute (ITI) for holding the 18th Council meeting and for providing generous hospitality to its participants.
2. The preparation of necessary documentation by COMSATS Secretariat and the administrative support provided to ITI for the successful organization of the meeting is noted with satisfaction.
3. The Council Members are pleased to learn about the high quality of multi-disciplinary research work being undertaken by ITI, and encourage the Institute to seek research partners in COMSATS' Member States.
4. The Council welcomes the induction of the Al-Farabi Kazakh National University (KazNU), Kazakhstan, as a new Member of the Network of Centres of Excellence and hopes that the University will actively participate in the programmes and activities of COMSATS.
5. The efforts being made by COMSATS Secretariat for extending COMSATS' membership to other developing countries is noted with satisfaction. The Council is pleased to learn about the initial consent of the Government of Morocco to join COMSATS as a Member State.
6. The signing of a Memorandum of Understanding (MoU) between COMSATS and UNESCO for cooperative programmes in different fields of science and technology has been noted with pleasure. COMSATS Secretariat is encouraged to continue its collaboration with international organizations having similar mandates, including UNESCO, TWAS and ISESCO, for the socio-economic uplift of the countries of the South.
7. The Council recognizes the importance of the Charter of the Network of Centres of Excellence and considers the amendments approved in the present meeting an important step towards unified statutes of the organization.
8. The Council appreciates the dedicated efforts of COMSATS Secretariat to fulfil the objectives of the organization, and takes note of the following additional achievements:
 - (i) Launching of the fourth International Thematic Research Group (ITRG) and continuation of the activities of three already operational ITRGs;
 - (ii) Preparations for launching of two more ITRGs during 2015;
 - (iii) Steady stream of capacity-building events, organized in collaboration with other international organizations, with the participation of scientists, engineers and technicians belonging to Centres of Excellence and Member States;
 - (iv) Preparations for holding the 3rd Commission Meeting of COMSATS during October 2015;
 - (v) Launching of COMSATS' Distinguished Professorship Scheme;
 - (vi) Launching of COMSATS' Science Diplomacy Programme;
 - (vii) Increasing the utilization of postgraduate scholarships at the COMSATS Institute of Information Technology (CIIT), Pakistan, by Member Countries; and
 - (viii) Concerted efforts for the regular publication of COMSATS' newsletter, journal 'Science Vision' and other information material about the organization.
9. The visits of Executive Director to the international organizations and Centres of Excellence and interactions with the members of diplomatic and scientific communities of Member States are highly beneficial in promoting COMSATS' mission of South-South cooperation in science and technology. He is advised to continue his efforts towards the implementation of COMSATS five-year strategy.
10. The Council records with gratitude the financial and in-kind contributions by some Member Countries towards COMSATS' activities and encourages all others to provide financial support to the organization for achieving the objectives of South-South cooperation.
11. The Council encourages the Network members to make serious efforts for the following:
 - (i) Increasing the number of collaborative research and development projects with other Centres of Excellence;
 - (ii) Redouble efforts to commercialize the products developed in their respective Centres of Excellence;
 - (iii) Launching of the remaining four ITRGs;
 - (iv) Maximum utilization of the scholarships offered by Centres of Excellence in China, Pakistan and Iran;
 - (v) Keeping COMSATS Headquarters aware of new developments and major achievements of their organizations;
 - (vi) Contributing scholarly scientific articles for publication in COMSATS' bi-annual journal, the 'Science Vision'; and
 - (vii) Placement of their officers at COMSATS Headquarters on secondment.
12. COMSATS Coordinating Council reiterates its recommendation for the Member States to increase their level of GERD component to a level of 2% of GDP and enhance financial support for international bodies that provide S&T capacity-building opportunities.



The COMSATS Management Committee assists the 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.

37TH & 38TH MEETINGS OF COMSATS MANAGEMENT COMMITTEE

Under the chairmanship of the Executive Director COMSATS, Dr. Imtinan Elahi Qureshi, COMSATS Management Committee held two meetings during 2015, one in each half of the year. In addition to the Chairman, these meetings were attended by the following members: Dr. Haroon Rashid, Pro-Rector, COMSATS Institute of Information Technology (CIIT), representing the Rector CIIT; Mr. M. Amir Malik, CEO, COMSATS Internet Services (CIS); Dr. Tariq-ur-Rahman, Former Chairman, Pakistan Council for Science and Technology (PCST); Mr. Tajammul Hussain, Advisor (Programmes), COMSATS; Mr. Sabih ur Rahman, Advisor (HCA), COMSATS; Mr. M. Bilal Chouhan, Deputy Director (A&E), COMSATS; Mr. Amanullah Khattak, Deputy Director (F&A), COMSATS; and Mr. Zhang Haihua, Science Attaché, Embassy of China in Pakistan.

38th Meeting of the Management Committee

The 38th Meeting of the Management Committee was held on 12th November 2015, at COMSATS Secretariat, Islamabad.

In his opening remarks, Dr. Qureshi briefed the Committee about the deliberations and outcomes of the 3rd General Meeting and the 3rd Consultative Committee Meeting held in Accra, Ghana, on October 26-28, 2015. The participants of the meeting appreciated the efforts of the Executive



Director and his colleagues at COMSATS Secretariat for the success of the then recently held statutory body meetings of COMSATS.

During the meeting, the Committee deliberated on various agenda-items, including the implementation status of the decisions taken in its last meeting (37th), as well as the follow up actions taken in view of the decisions of the 18th Council meeting (May-2015, Colombo, Sri Lanka). The meeting also reviewed the programmes and activities of the Secretariat held from April to October 2015. Performance, activities and programmes of COMSATS Institute of Information Technology (CIIT) and COMSATS Internet Services (CIS) during the said period were also presented before the Committee by Pro-Rector CIIT and CEO CIS, respectively.

The Committee nominated one of the Deans of CIIT as a prospective Member of the Institute's Board of Governors for a period of three years. The Committee also reviewed the financial matters of COMSATS, including the external audit, Annual Membership Contribution from Member States, and status of COMSATS' Endowment Fund. It was noted that the rules and regulations for COMSATS' Endowment Fund were approved during the third General Meeting of the Commission, and the Executive Director had announced US\$ 1,000 as his personal contribution towards the Fund. Another personal contribution of PKR 100,000/- was pledged by Prof. Dr. Raheel Qamar, CIIT, who attended the General Meeting as a member of country delegation from Pakistan. Both the personal contributions were gratefully acknowledged by the Committee. The participants resolved to make efforts for ensuring more donations towards the Fund from the Governments of COMSATS' Member States, relevant international organizations, and individual philanthropists.

Having approved all the proposed actions under various agenda-items, the Meeting concluded with a Vote of Thanks by the Executive Director.



Deputy Director (F&A) COMSATS receiving a cheque from Executive Director COMSATS as latter's personal contribution towards COMSATS' Endowment Fund

37th Meeting of Management Committee

The 37th meeting of the Management Committee was held on 28th April 2015 at COMSATS Secretariat.

A three-point agenda deliberated upon during the meeting comprised: (i) the status of implementation of decisions taken during the 36th meeting held on 4th December 2014; (ii) follow-up of 17th Coordinating Council Meeting; and (iii) preparations in connection with 18th Coordinating Council Meeting. Administrative and Financial matters of COMSATS Secretariat were also discussed during the meeting.

In his opening remarks, the Executive Director welcomed the participants and highlighted the importance of the 37th meeting of the Committee with particular reference to its support for the preparation of the then forthcoming 18th Council Meeting in Colombo, Sri Lanka, on 12-13 May 2015.

He also briefed the participants on some recent developments of COMSATS that included: the launching of COMSATS' Science Diplomacy initiative; signing of MoU between COMSATS and UNESCO; and the Executive Director's visit to the two Member States of COMSATS, Jamaica and Kazakhstan.

The working paper of the 18th Coordinating Council meeting was presented during the meeting. The Committee discussed and deliberated in detail the agenda of the Council meeting and the COMSATS' budget for 2015-2016. Administrative and financial matters of COMSATS deliberated upon included: report of audited accounts for the financial year ended on 30th June 2014; budget estimates for the financial year 2014-15 and status of Annual Membership Contribution. The budget was endorsed for submission to the 18th Coordinating Council Meeting for approval.



2

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COMSATS Secretariat serves a dual role of being the Secretariat of the Commission and the Network of Centres of Excellence. It is responsible for regularly holding statutory body meetings, as well as taking follow-up actions based on their deliberations. 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.

ACTIVITIES OF COMSATS SECRETARIAT

Administrative Functions

Led by the Executive Director, a small team at COMSATS Secretariat makes strenuous efforts round the year to conduct the Secretariat's functions in accordance with COMSATS' Statutes and international standards.

The Secretariat works closely with the office of the Chairperson of the Commission in coordinating the Commission's functions and activities; makes efforts towards establishing formal working relationships with relevant organizations for the promotion of Commission's objectives; and maintains a continuous liaison with members of the Commission through the respective offices of the Focal Points designated by the Member States. With COMSATS' 5-year strategy as a guideline, these activities are driven by South-South Cooperation involving existing and new partner organizations and through novel practices of pooling resources. During the calendar year 2015, COMSATS Secretariat performed a number of tasks under various heads. The crux of these activities is as below with details in corresponding sections:

- Organization of the 3rd General Meeting of COMSATS in Ghana, the 3rd Meeting of Consultative Committee in Ghana and the 18th Meeting of Coordinating Council in Sri Lanka (Section 1);
- Strengthening of linkages with Governments and S&T institutions of 11 developing countries (9 Members and 2 potential Member States) through international visits of Executive Director and other senior officials of COMSATS Secretariat (Section 6);
- Offer of COMSATS' membership made to 5 developing countries (Gambia, Qatar, Brazil, Malaysia, Palestine) in meetings with their high-level government officials and through other intermediaries (Section 2);
- Kingdom of Morocco and the State of Palestine joined COMSATS as 22nd and 23rd

- Member States, respectively (Section 2);
- Visits of Executive Director to 4 Centres of Excellence of COMSATS, ICENS-Jamaica, KazNU-Kazakhstan, ITI-Sri Lanka, and IROST-Iran; other officials of COMSATS also visited NRC-Egypt and NMC-Nigeria (Section 6);
- Induction of a new member to the Network of International S&T Centres of Excellence, Al-Farabi Kazakh National University (KazNU), Kazakhstan (Section 1 and 2);
- Organization/sponsorship of 14 national/international scientific conferences/workshops/ meetings, including 6 in partnership with ISESCO (Section 3);
- Co-organization of 2 meetings of International Thematic Research Groups (Section 4);
- Launching of a new ITRG on Agriculture, Food Security and Biotechnology having National Research Centre (NRC), Egypt, as its Lead Centre (Section 4);
- Launching of COMSATS' Science Diplomacy Programme and holding a number of related activities (Section 8);
- Signing of MoUs with three international organizations: UNESCO, The World Academy of Sciences (TWAS), and the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), (Section 5);
- Publication of 6 issues of COMSATS Newsletter, and an Issue of COMSATS journal, Science Vision (Section 9);
- Important meetings to discuss cooperation matters with high officials of UNESCO Headquarters during visit to Paris (Section 2 and 6);
- Award of postgraduate scholarships at CIIT to 8 students belonging to Nigeria (6), Bangladesh (1) and Sudan (1), (Section 8);
- Annual Membership Contributions received from 3 Member States during 2015, Pakistan, China and Jamaica (Section 10);
- Holding of 2 meetings of the Management Committee (37th & 38th), (Section 1).

Enhancement of Membership of COMSATS' Commission

South-South Cooperation is imperative for COMSATS' objectives of science and technology-led sustainable economic growth in developing countries. Remaining conscious of its responsibility, COMSATS Secretariat continued its efforts to approach the governments of the countries of the South with the offer of COMSATS' membership. These countries/states included Palestine, Morocco, Gambia, Qatar, Brazil, and Malaysia. Relevant officials were sensitized about the potential benefits of South-South cooperative opportunities that are available through COMSATS' platform, and the benefits and obligations associated with COMSATS' Membership.

Morocco's State Membership to COMSATS

In July 2015, Morocco became COMSATS' 22nd Member State. The COMSATS' accession agreement, in this regard, was signed in Rabat, on July 14, 2015, by H.E. Mr. Lahcen Daoudi, the Moroccan Minister for Higher Education, Scientific Research and Training, representing the Moroccan Government, while and the Executive Director COMSATS signed the agreement on behalf of COMSATS.

The efforts made for Morocco's Membership were realized with the high patronage of H.M. King Mohammed VI and the leadership of the honourable Minister. The Ambassador of Morocco in Islamabad, H.E. Mr. Mustapha Salahdine, and the Ambassador of Pakistan in Rabat, H.E. Mr. Mohammed Waheed-ul-Hasan, played an





Moroccan Minister for Higher Education, Scientific Research and Training and Executive Director COMSATS signing Morocco's Accession Agreement

important part to this effect. The latter also witnessed the signing ceremony of the accession agreement in Rabat.

Speaking on the signing ceremony, H.E. Mr. Daoudi recognized the laudable commitment of Pakistan in hosting COMSATS Secretariat in Islamabad and stated that the Kingdom of Morocco looks forward to playing constructive role as COMSATS' Member State. In his short statement on the occasion, Dr. Qureshi spelled out some unique features of COMSATS as an intergovernmental organization and gave several reasons why COMSATS' Membership would be beneficial for Morocco.

Having joined COMSATS, Morocco can now benefit from the consultations and technical exchanges made at various COMSATS' fora. The Moroccan students can now benefit from the scholarships for COMSATS' Member States offered by various nodes of COMSATS' Network. Similarly, Moroccan S&T institutions can benefit from COMSATS' Programmes.

Mohammed V University, Rabat, Morocco, has been nominated to join COMSATS' Network of Centres of Excellence. The Coordinating Council would take up the matter of its induction in its 19th Meeting to be held in Islamabad, Pakistan, in May 2016.

Morocco's Ministry of Higher Education, Scientific Research and Training was designated as COMSATS' Focal Point in the country. By virtue of its State membership, Morocco is being represented at the Heads-of-State level Commission and Consultative Committee.

Palestine's State Membership to COMSATS

Palestine is the latest Member State of COMSATS. Efforts for the State of Palestine to joining COMSATS as a Member started gaining pace, when Ambassador of Palestine to Pakistan, H.E. Mr. Walid Abu Ali, visited COMSATS Secretariat on the invitation of the Executive Director COMSATS (11th March 2015). The Ambassador was

accompanied by the First Secretary/Cultural and Educational Attaché of the Palestine Embassy, Mr. Husni Abu Ghoush. On the occasion, a letter of invitation for the State of Palestine to join COMSATS as a Member State, along with COMSATS' draft Accession Agreement and other relevant documents, were handed over by Dr. I.E. Qureshi to Ambassador Ali for onward submission to the then Palestinian Minister for Education and Higher Education, H.E. Ms. Khawla al-Shakhsheer. The Palestinian Ambassador pledged to forward the Membership documents to the relevant Ministry and assured the Executive Director of a personal follow-up in this regard.



Palestinian delegation in meeting with COMSATS' officials at the Secretariat in Islamabad

As a result of subsequent interactions and consultations between the Executive Director COMSATS and the Ambassador of Palestine, the Palestinian government approved the membership of Palestine to COMSATS, which was formalized at a signing ceremony held in Islamabad, on 5th October 2015. The Ambassador of Palestine and the Executive Director COMSATS signed the Accession Agreement on behalf of the Government of Palestine and COMSATS, respectively. The agreement also entails appointment of a relevant Ministry of the State of Palestine as COMSATS' Focal Point. In this regard, H.E. Dr. Sabri Saydam, the incumbent Palestinian Minister for Education and Higher Education, has been requested to approach the Palestinian Government to designate his Excellency's good office to act as COMSATS' Focal Point in the State.



Executive Director COMSATS and the Palestinian Ambassador exchanging signed copies of the Accession Agreement

Other Efforts to Expand State Membership

Gambia

A formal letter of invitation for the Republic of Gambia to join COMSATS as a Member State, along with COMSATS' draft Accession Agreement and other relevant documents, was sent to H.E. Dr. Aboubacar Abdullah Senghore, Minister for Higher Education Research, Science, and Technology, Government of Gambia, by the Executive Director COMSATS. In response, the Gambian Minister has informed that the Government of Gambia has agreed to join COMSATS and is expected to soon sign the Accession Agreement.

Qatar

The Executive Director COMSATS held a meeting with H.E. Mr. Shahzad Ahmed, Pakistan's Ambassador to Qatar, during his visit to Qatar (27th - 28th March 2015). During the meeting, the former requested that the matter of Qatar's State membership to COMSATS may be taken up with the Ministry of Education and Higher Education, Qatar. The honourable Ambassador agreed to pursue the matter with the Ministry. A letter of invitation for the State of Qatar to join COMSATS as a Member State, along with COMSATS' draft Accession Agreement and other relevant documents, was handed over by Dr. Qureshi to the Pakistani Ambassador for onward submission to the Minister for Education and Higher Education, Qatar, H.E. Dr. Mohamed bin Abdul Wahed Al Hammadi.

On 7th May 2015, Mr. Ahmed held a meeting with the honourable Minister who is also the Secretary General of the Supreme Education Council (SEC) of Qatar. During the meeting, the Ambassador handed over the letter of invitation from COMSATS and other relevant Membership Documents.

Brazil

For Brazil's membership to COMSATS, the Executive Director COMSATS has followed up on previous efforts with H.E. Mr. Celso Pansera, Minister for Science, Technology, and Innovation, Brazil, seeking his assistance for the accession of Brazil as COMSATS' Member State. In December 2015, a meeting with H.E. Mr. Burhanul Islam, Ambassador of Pakistan to Brazil, was held in Islamabad, to expedite the process of Brazil's accession to COMSATS. The honourable Ambassador pledged to forward the membership documents to the relevant Ministry and assured to personally follow-up the case of Brazil's membership to COMSATS. It may be noted that Brazil enjoys a significant place in the organization owing to EMBRAPA Agrobiologia's representation in COMSATS Coordinating Council.

Malaysia

The matter of Malaysia's membership to COMSATS was pursued with H.E. Mr. Syed Hassan Raza, High Commissioner of Pakistan to Malaysia, and Ms. Nor Syahira Binti Anuar, Assistant Secretary, Multilateral Economics and Environment Divisions (MEED), Department of Multilateral Affairs, Ministry of Foreign Affairs, Malaysia. COMSATS' accession documents and relevant previous correspondence were sent to the officials for onward submission to the relevant authorities of the Government of Malaysia.

Enhancement of Membership of COMSATS' Network of International S&T Centres of Excellence

COMSATS' major instrument to support and facilitate technical collaboration among its Member States is its Network of International S&T Centres of Excellence that provides an enabling environment for its activities related to South-South Cooperation in various scientific and technological disciplines. During 2015, efforts continued at COMSATS Secretariat to strengthen the Network with inclusion of more scientific institutions, especially from COMSATS' Member States. These efforts are in line with the decisions and resolutions of COMSATS' statutory bodies, including the Consultative Committee that advised COMSATS Secretariat during its 3rd Meeting (October 2015) to strongly pursue the matter of enhancing Network Membership.

In May 2015, the Al-Farabi Kazakh National University (KazNU) became the 20th member of COMSATS' Network of International S&T Centres of Excellence. Nominated by COMSATS' Focal Point in Kazakhstan, the Ministry of Education and Science (MES), Kazakhstan, the case of KazNU's membership was presented by Prof. Tlekkabul Ramazanov, Vice-Rector for Research and Innovative Affairs, Al-Farabi Kazakh National University (KazNU), during the 18th Coordinating Council Meeting. The Council approved the induction of KazNU into the Network in the light of the joint evaluation report by the Executive Director COMSATS and another member of COMSATS' Technical Advisory Committee (TAC), Prof. Khatijah Mohamad Yusoff (Malaysia), after their visit to KazNU on 24th – 25th April 2015. The Rector of Al-Farabi Kazakh National University (KazNU), Prof. Dr. G. M. Mutanov, has been appointed the member of Coordinating Council.

Another recent outcome of COMSATS' efforts to strengthen its Network was the nomination of Mohamed V University, Rabat, by the Government of Morocco. The Council in its 19th Meeting, to be held in Islamabad in 2016, will review the case in light of the presentation by the President (or his representative) of the University, as well as technical evaluation report and recommendations made by members of the Technical Advisory Committee.

For further expansion of the Network of Centres of Excellence, three Member States of COMSATS currently having no representation in the Network, Palestine, Zimbabwe, and Uganda, are being engaged for seeking their government's nominations.

Follow-up on the Decisions of the 18th Coordinating Council Meeting of COMSATS

COMSATS Secretariat actively followed up on the decisions of the Coordinating Council made in its 18th meeting regarding the operations of the Network, aimed at

KazNU in Brief

Al-Farabi Kazakh National University, the leading higher education institution of the Republic of Kazakhstan, has 14 faculties, 25 research institutes and a technology park. The University has 1500 faculty members, including 27 academicians of National Academy of Sciences and more than 300 doctors and professors. Al-Farabi KazNU has working relations with 418 foreign HEIs and a number of international organizations, including the UN, NATO, the Shanghai Cooperation Organization, the British Council, Alliance Française, Confucius Institutes, and USAID.



effective implementation of COMSATS' programmes and activities in the Member States. The Council also adopted a 'Resolution' on that occasion, which urged COMSATS Secretariat to continue its efforts to enhance the membership of its Network of International S&T Centres of Excellence. The contacts made, in this regard, resulted in nomination of the Mohamed V University of Rabat by the Government of Morocco, as a potential member of COMSATS' Network, as mentioned in the previous sub-section. The decision regarding the affiliation request of Mohamed V University of Rabat would be taken by the Council at its 19th meeting, subject to completion of all formalities.

The approval accorded by the Council for induction of Al-Farabi Kazakh National University (KazNU) as the 20th member of the COMSATS' Network was followed up by COMSATS Secretariat by issuing a 'Certificate of Membership' to KazNU, on 21st May 2015.

The Council had also approved the draft Memorandum of Understanding (MoU) between COMSATS and TWAS for collaboration in the field of Science Diplomacy, and authorized the Executive Director COMSATS to sign it on behalf of his organization and to submit it to TWAS for signatures of their relevant authority. The MoU was signed by the former in Islamabad on June 16, 2015. On subsequent signatures by Executive Director TWAS in Trieste, the MoU is now operational.

The Coordinating Council in its 17th meeting, and UNESCO's Executive Board in its 195th Session, had authorized their respective senior officials to sign the Memorandum of Understanding between UNESCO and COMSATS. As a result, the Executive Director COMSATS received an invitation letter to visit UNESCO Headquarters from Dr. Flavia Schlegel, UNESCO Assistant Director-General for Natural Sciences. The Executive Director COMSATS and Director General UNESCO signed the MoU on behalf of their respective organizations on March 18, 2015. The signing ceremony was followed by the first meeting of the Working Group of COMSATS and UNESCO, for which the Executive Director COMSATS and the Director International Basic Sciences Programmes (IBSP), Division of Science Policy, UNESCO, Dr. Maciej Jan Nalecz, met at the latter's office in UNESCO Headquarters, Paris. The officials held preliminary discussions on joint future activities (details in Section 5).

Upon the Council's advice to activate the inactive International Thematic Research Groups (ITRGs) of COMSATS, efforts were made to encourage the relevant Lead Centres to launch their groups. After making announcement in this regard during the 17th Council Meeting, National Research Centre (NRC) held the foundation meeting of the ITRG on 'Agriculture, Food Security, and Biotechnology' in June 2015, with the support from COMSATS Secretariat (detailed in Section 4). After strong pursuit by COMSATS Secretariat, IROST-Iran has committed to host the foundation meeting of ITRG on 'Renewable Energy' in July 2016.

During the 2nd General Meeting of COMSATS (16-17 April 2012, Pakistan), COMSATS Secretariat was advised to take measures in order to harmonize the 'International Agreement to Establish COMSATS' and the 'Charter of the Network of International S&T Centres of Excellence', to be considered jointly as 'COMSATS Statutes'. In this regard, the 2nd General Meeting of COMSATS approved the necessary amendments in the 'International Agreement to Establish COMSATS',

while the Charter was amended during the 16th, 17th, and 18th Coordinating Council Meetings. The 18th Council meeting had mandated the Executive Director COMSATS to submit the consolidated Statutes for the approval of the 3rd General Meeting of COMSATS. The draft Statutes of COMSATS were prepared by COMSATS Secretariat in consultation with Prof. M. H. A. Hassan (Former Executive Director TWAS and Honourary Lifetime Member of COMSATS Coordinating Council), which were endorsed by the 3rd Consultative Committee Meeting (26th October 2015, Ghana) and were formally approved by the 3rd General Meeting of COMSATS (27-28 October 2015, Ghana).

In response to the standing offer by COMSATS Institute of Information Technology (CIIT), COMSATS Secretariat invited its Member States and Centres of Excellence to avail the Institute's 100 post-graduate scholarships and five post-doctoral fellowships for researchers/scientists from the Member States. In this regard, 43 nominations from Ghana and a nomination from Tanzania were received for post-graduate studies for the Fall 2016. The nominees' applications received are being scrutinized for suitability as per the Institute's admission criteria.

Disbursement of Annual Membership Contribution (AMC)

To undertake its international programmes and activities in line with the organizational objectives, COMSATS mainly relies on voluntary Annual Membership Contributions (AMC) from its Member States, which are maintained as country-wise Trust Fund. The AMC enables COMSATS to conduct technical activities and programmes in the contributing Member Countries and, in particular, assist their researchers and scientists to participate actively in COMSATS' international capacity-building events and programmes.

During the year 2015, COMSATS Secretariat followed up the matter through correspondence and interactions with Focal Points in Member States, including Colombia, Egypt, Jamaica, Kazakhstan, Iran, Nigeria, Tunisia, Tanzania, Uganda, and Zimbabwe, who were requested to expedite the payment of AMC as per their commitments made earlier. Moreover, during his visits to Ghana, Iran, Jamaica, Kazakhstan, and Sri Lanka, the Executive Director COMSATS urged COMSATS' Focal Points in these countries to make contribution towards AMC, and highlighted its benefits. As a result, COMSATS received grants from three Member States: China (US \$ 20,000), Pakistan (US \$ 20,000) and Jamaica (US \$ 20,000) (a brief account of the AMC received during the reporting period is given in the Section 10).

Important Meetings

COMSATS' officials hold meetings with relevant officials of Member States and other working partners, with a view to ensure a smooth operation of COMSATS' projects and programmes, as well as to explore more avenues of cooperation. The officials invited or called upon for meetings, in this regard, include Government officials of Member States, Heads of foreign missions in Islamabad, and representatives of partner organizations. In addition to the interactions of COMSATS' officials covered in other sections of this Report, a brief account of the meetings held in Islamabad is as follows:



Meeting with the Palestinian Ambassador to Pakistan (11th March 2015)

The Ambassador of the State of Palestine to Pakistan, H.E. Mr. Walid Abu Ali, visited COMSATS Secretariat, on 11th March 2015, and held a meeting with the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi. His Excellency was accompanied by the First Secretary/Cultural and Educational Attaché of the Palestine Embassy, Mr. Husni Abu Ghoush. Also present in the meeting were senior officials of COMSATS Secretariat, including Advisor (Programmes), Mr. Tajammul Hussain and Director (International Affairs), Dr. Majid Khan. The interactions made during this meeting led to Palestine signing the Accession Agreement to join COMSATS later during the year (details in Section 2).



Executive Director COMSATS giving briefing to Palestinian officials

Speaking with the Palestinian officials, Dr. Qureshi expressed his desire for academic cooperation and engagement with the State of Palestine. Introducing COMSATS as a major facilitator of South-South cooperation, Dr. Qureshi highlighted its areligious and apolitical nature.

Some salient points covered in Dr. Qureshi's briefing included:

- COMSATS' Network of Centres of Excellence as a technical platform for interactions at scientist-to-scientist level, with about 10,000-15,000 researchers serving their national research interests and undertaking scientific cooperative projects internationally;
- Significance of COMSATS Coordinating Council's annual meetings for mobilizing the Network's human and technical resources for the organization's international programmes and activities;
- COMSATS' contributions for institution-building in the light of the success of the organization's two flagship projects in Pakistan: the COMSATS Institute of Information Technology (CIIT) and COMSATS Internet Services (CIS).



E.D. COMSATS presenting a set of COMSATS' publications to the Palestinian Ambassador

The Ambassador expressed keen interest in learning about the programmes of the organization, especially in the area of education. He was informed about the offer of hundred post-graduate scholarships at CIIT allocated for students from COMSATS' Member States, and administrative matters relating to these. Dr. Qureshi encouraged a group of two or three faculty members from Palestine to visit CIIT, and offered to facilitate the matter. He also expressed his desire that the senior faculty members from CIIT should also visit Palestinian universities to develop academic linkages.

A letter of invitation for the State of Palestine to join COMSATS as a Member State, along with COMSATS' draft Accession Agreement and other relevant documents, was handed over by Dr. Qureshi to H.E. Mr. Walid Abu Ali for onward submission to the honourable Palestinian Minister for Education and Higher Education. H.E. Mr. Ali appreciated the idea of Palestine becoming COMSATS' Member State and pledged his full support in this regard.

Meeting with the Nigerian High Commissioner to Pakistan (3rd March 2015)

On March 3, 2015, the Executive Director COMSATS held a meeting with the High Commissioner of the Federal Republic of Nigeria to Pakistan, H.E. Mr. Dauda Danladi, at the Islamabad campus of COMSATS Institute of Information Technology (CIIT). Mr. Danladi was accompanied by senior officials of the Nigerian High Commission. COMSATS' delegation also comprised of Advisor Programmes, Mr. Tajammul Hussain, and Director (International Affairs), Dr. Majid Khan. Also in attendance were senior officials of CIIT's International Office, as well as the representatives of the departments of Electrical Engineering, Computer Science and Physics. Fourteen Nigerian students then pursuing their post-graduate studies at CIIT were also present at the meeting.

On the occasion, Dr. Qureshi gave the Honorable High Commissioner a brief introduction of COMSATS that touched upon its membership, joint research activities, and other projects and programmes. The Nigerian High Commissioner was given an overview of the ongoing collaboration between COMSATS and its Centre of Excellence in Nigeria, the National Mathematical Centre (NMC), with reference to the following:



Meeting with Nigerian High Commissioner also attended by Nigerian students studying at CIIT

- NMC leading the COMSATS' International Thematic Research Groups (ITRG) on 'Mathematical Modeling', conducting joint research for assessing the impacts of air and water pollution and proposing their remedies;
- NMC's regular representation at the annual meetings of COMSATS Coordinating Council including the hosting of the 12th meeting of COMSATS Coordinating Council and 1st meeting of COMSATS Consultative Committee in April 2009, in Abuja;
- COMSATS' support extended to the scientific community of Nigeria over the years in various forms, including travel grants to five Nigerian scientists for facilitating their participation in capacity-building meetings; organization of two capacity-building events in Nigeria, as well as awarding of postgraduate scholarships to fourteen Nigerian students at CIIT (Pakistan).

His Excellency was pleased to meet the Nigerian students pursuing post-graduate studies at CIIT, mostly in the field of Mathematics, and appreciated the quality of post-graduate education that they had been receiving at CIIT. He requested if COMSATS could explore the possibility of providing educational opportunities to undergraduate students of Nigeria. In this regard, it was proposed that bilateral agreements could be reached between the governments of Pakistan and Nigeria to work out special arrangements for Nigerian students to study at CIIT and other higher education institutions of Pakistan.

H.E. Mr. Danladi sought COMSATS' assistance to Nigeria for developing tools and equipment that could be utilized to detect and treat viruses, and identification of possible solutions for bringing down pollution levels in Nigerian cities, such as Lagos. In this connection, Dr. Qureshi apprised the High Commissioner about the research work being undertaken by COMSATS International Thematic Research Group on 'Climate Change and Environmental Protection'; the meaningful research work of CIIT's Departments of Pharmaceutical Sciences; Bio-sciences; and Centre for Micro and Nano Devices; as well as their search for solutions to address developmental challenges faced by COMSATS' Member States.



H.E. Mr. Dauda Danladi giving a shield to the Executive Director COMSATS

With reference to the relevant correspondence made, Dr. Qureshi apprised His Excellency about the status of the Annual Membership Contribution (AMC) of Nigeria towards COMSATS, and was requested to facilitate the process, to which Mr. Danladi kindly consented.

On June 30, 2015, the Executive Director COMSATS held a meeting with Nigerian students (Fall 2013 Batch), who graduated from CIIT under the scholarships offered to COMSATS' Member States. Enrolled in graduate programmes in Mathematics and Biosciences at CIIT, these students undertook research pertaining to: fluid mechanics



applications in healthcare, Hilbert space operators, eradication of diseases, chromatographic analysis in industry, and cyber-security.

Held at the Islamabad campus of the Institute, the meeting was attended by Mr. Tajammul Hussain, Advisor (Programmes) COMSATS; Dr. Arshad S. Malik, Head of CIIT International Office; and the six graduating Nigerian students, among others. Mr. Aminu Abdulkadir, Minister/Head of Chancery, Nigerian High Commission in Islamabad, also graced the occasion with his presence.

Speaking on the occasion, Dr. Qureshi referred to the aforementioned visit of the High Commissioner of the Federal Republic of Nigeria, and shared some discussion points with the Nigerian students. He congratulated the students on completion of their degree requirements, and hoped that the Nigerian students benefitted from quality education at CIIT, which would help them in becoming the drivers of change back home. Mr. Abdulkadir appreciated the academic performance of the Nigerian students. The Nigerian students were also presented CIIT souvenirs by Dr. Qureshi.

Meeting with the Sri Lankan High Commissioner to Pakistan (27th February 2015)

On 27th February 2015, the Executive Director COMSATS held a meeting with the outgoing Sri Lankan High Commissioner to Pakistan, H.E. Air Chief Marshal (R) Jayalath Weerakkody, at the latter's office in Islamabad, Pakistan. The Executive Director was accompanied by three senior officials of COMSATS Secretariat: Mr. Tajammul Hussain, Advisor (Programmes); Dr. Majid Khan, Director (International Affairs); and Mr. Farhan Ansari, Sr. Assistant Director (Programmes). The primary objective of the meeting was to brief the honourable High Commissioner about the forthcoming 18th Meeting of COMSATS Coordinating Council to be hosted by the Industrial Technology Institute (ITI), in Colombo, Sri Lanka, on 12-13 May 2015, for possible facilitation upon return to his home country.



The Executive Director gave the High Commissioner necessary background of COMSATS Coordinating Council in relation to COMSATS' Network of Centres of Excellence, and the significance of its annual meetings. The High Commissioner was given inkling about the key issues that the Council meeting would deliberate upon in Sri Lanka. It was noted that the participating Council members would visit different laboratories of ITI that would facilitate the Institute's stronger linkages with other Centres of Excellence. The High Commissioner was also informed about the joint organization of the International Symposium on 'Impacts of Atmospheric Extreme Events on Geo-surface in a Changing Climate' (14-15 May 2015) and the 4th Meeting of COMSATS' International Thematic Research Group (ITRG) on 'Climate Change and Environmental Protection' in conjunction with the Council meeting.

Moreover, the High Commissioner was informed about:

- ITI being a member of the ITRGs on 'Climate Change and Environmental Protection' and 'Mathematical Modeling', and another Sri Lankan institute, Institute of Fundamental Studies (Sri Lanka) being a member of ITRG on 'Natural Products Sciences'
- Travel grants given to 30 Sri Lankan scientists over the years, in order to facilitate their participation in various capacity-building activities;
- Offer of postgraduate scholarships by COMSATS Institute of Information Technology (CIIT) to students/researchers from COMSATS' Member States, including Sri Lanka.

Dr. Qureshi also welcomed the participation of Sri Lankan scientists and researchers in COMSATS' capacity-building events scheduled for the future.

The honourable High Commissioner appreciated COMSATS' programmes aimed at South-South cooperation and scientific capacity-building of its Member States. He took keen interest in the offer of postgraduate scholarships by CIIT, and pledged to approach the Sri Lankan Ministry of Higher Education with a view to identifying suitable students for availing these scholarships. The High Commissioner also pledged to brief his successor regarding COMSATS' programmes and activities in the Member States.



Sri Lankan envoy with COMSATS' Executive Director and other senior officials of the Secretariat

SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS' SUPPORT

• International Conference on Mathematical Modeling (28-29 December 2015, Abuja, Nigeria)	48
• International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (23-25 November 2015, Rabat, Morocco)	51
• COMSATS' Discussion Forum on Science for a Sustainable Future (10 November 2015, Islamabad, Pakistan)	53
• International Symposium on Light and Life (14-16 October 2015, Islamabad, Pakistan)	55
• National Training Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions, and Small Scale Industries (12-16 October 2015, Accra, Ghana)	59
• 3 rd Consultative Regional Workshop on National Innovation System and Intellectual Property (5-7 October 2015, Tunis, Tunisia)	61
• 5 th International Workshop on Internet Security: Enhancing Information Exchange Safeguards (14-18 September 2015, Ankara, Turkey)	63
• National Seminar on South-South Cooperation: Towards a Sustainable Future (14 September 2015, Islamabad, Pakistan)	66
• National Training Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions, and Small Scale Industries (23-27 August 2015, Rustaq, Oman)	68
• Lecture on UNFCCC, Kyoto Protocol, and Beyond (16 June 2015, Islamabad, Pakistan)	70
• International Conference on Agriculture, Food Security and Biotechnology (8-9 June 2015, Cairo, Egypt)	71
• International Symposium on Impacts of Atmospheric Extreme Events on Geo-Surface in a Changing Climate (14-15 May 2015, Colombo, Sri Lanka)	73
• International Scientific Spring – 2015 (16-20 March 2015, Islamabad, Pakistan)	75
• COMSATS Round Table Meeting on Science Diplomacy in the South (25 February 2015, Islamabad, Pakistan)	76

Capacity-building events make a prominent part of COMSATS' activities aimed at South-South Cooperation. In spite of its limited financial resources, 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 over 240 national and international events on various subjects. Such events have provided 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.

SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS' SUPPORT

International Conference on Mathematical Modeling (28-29 December 2015, Abuja, Nigeria)

International Conference on Mathematical Modeling was jointly organized by COMSATS; the Islamic Educational, Scientific and Cultural Organization (ISESCO); and COMSATS' Centre of Excellence in Nigeria, the National Mathematical Centre (NMC), on December 28-29, 2015, in Abuja. The event provided a forum to researchers and scientists belonging to common Member States of COMSATS and ISESCO for the exchange of knowledge, skills and expertise in the field of mathematical modeling.

The event was inaugurated by Prof. A.R.T. Solarin, Director/Chief Executive NMC, Nigeria, on 28th December 2015. Held at the Nigerian National Atomic Energy Commission, Abuja, the inaugural ceremony of the event was attended by about 40 senior officials from relevant universities, research organizations and government departments of Nigeria, as well as local media personnel.

During his address at the inaugural ceremony, Prof. Solarin welcomed the local and foreign participants of the event, and thanked COMSATS and ISESCO for collaborating with NMC to organize this important event. Giving overview of the Conference, he noted that the various topics of the event have focus on solving problems of humanity through mathematical modeling. Prof. Solarin acquainted the participants with the current activities of NMC in the fields of mathematics, computer science, statistics and theoretical



physics. In this regard, he informed that NMC has been selected for the establishment of UNESCO Professorial Chair Programme in Mathematics (Algebra). Highlighting his Centre's collaboration with COMSATS, Prof. Solarin stated that several Nigerian students have been awarded scholarship by COMSATS Institute of Information Technology (CIIT), Pakistan, for post-graduate studies. He thanked COMSATS for its consistent support towards the capacity- building of Nigerian institutions, in general, and NMC in particular.

A message of the Executive Director COMSATS was read out on the occasion by Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Secretariat. The message highlighted the applications of mathematical modeling in various fields of science and technology that could drive socio-economic development. COMSATS' commitment to develop and strengthen linkages among the countries of the South for the exchange of resources, technology, and knowledge was reiterated. In the context of collaborative research activities under COMSATS International Thematic Research Groups (ITRGs) programme, activities of COMSATS' ITRG on Mathematical Modeling were also appreciated. Furthermore, he highlighted the ongoing collaboration between COMSATS and ISESCO, and thanked ISESCO for supporting COMSATS' programmes and activities in the common Member States.



Dr. Ismail AbdelHamid, Science Expert ISESCO, conveyed the greetings of the Director General of ISESCO, H. E. Dr. Abdulaziz Othman Altwaijri, and expressed pleasure on ISESCO's partnership with COMSATS and NMC for organizing the international conference. He informed that the promotion of sciences is the highest priority of ISESCO and its cooperation with COMSATS, in this regard, has been very fruitful. Dr. AbdelHamid expressed pleasure on ISESCO's involvement in the activities of COMSATS' ITRG on Mathematical Modeling by way of sponsoring the research project being executed by the Group.



The Conference was attended by about 40 research scientists belonging to Bangladesh, Jordan, Pakistan, Senegal and Nigeria, who presented research papers on different topics related to the applications of mathematical modeling in different fields of science and technology.

Research by Prof. Benjamin Oyediran Oyelami of NMC was focused on modeling the effect of pollutants on the lower and upper respiratory tracts. It showed how air pollution can lead to damage of the respiratory tracts triggering asthma, lung cancer and Chronic Obstructive Pulmonary Diseases (COPD). Prof. Oyelami presented

models that help understand aerodynamic behaviour of particulates (pollutants) and measure the rate of sedimentation and diffusion of the pollutants into the lower human respiratory system.

Dr. Salman Amin Malik, Assistant Professor, Department of Mathematics, COMSATS Institute of Information Technology (CIIT), Pakistan, presented his research titled, 'Inverse Problems for Time Fractional Diffusion Equations: Applications to Water Pollution'. His work related to the calculation of Biochemical Oxygen Demand (BOD), which is widely employed to measure the pollution due to organic agents, as well as to evaluate the water quality.

Mr. Mohammad Nashir Uddin, Senior Scientific Officer, Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh, presented his research on 'Development of Method for Rapid Quantification of Simple Sugars in Mango Juice by Chemometrics'. Mr. Nashir Uddin's work examined the prediction ability of simple sugar (Glucose, Sucrose and Fructose) in mango juice by Artificial Neural Network (ANN), Principal Component Regression (PCR) and Partial Least Squares Regression (PLSR) for developing a cost-effective method for quantification of simple sugars in commercial mango juice.

Prof. J. A. Ogidi, Biomathematics Programme Officer at NMC, presented his research titled, 'Ecological Risk Assessment: The Concept, Use, Complexity and Future'. He presented ecological (environmental) risk assessment as the method for determining risk posed by a stress (contaminant or perceived threat) to the survival and health of ecosystems.

Dr. Othman Al-Mashaqbeh, Assistant Researcher, Royal Scientific Society (RSS), Jordan, presented his research 'Assessment of Stormwater Runoff entering King Talal Dam (KTD)'. In his research, Dr. Al-Mashaqbeh estimated the levels of pollution loads carried by storm-water runoff entering the King Talal Dam using the Storm Water Management Model (SWMM) during October 2012 to October 2013 with a view to determine the bigger source of pollution. The storm-water runoff was evaluated using the EPA-SWMM, which showed that the pollutant loads carried by storm-water runoff (non-point source) were much higher than treated wastewater (point source) entering the KTD.

Prof. M. O. Ibrahim, University of Ilorin, Nigeria, presented his research, titled 'Global Analysis of an Ebola Model'. In his work, Prof. Ibrahim built and analyzed a mathematical model for the transmission dynamics of Ebola Virus. The model,



Group photo of the participants at the inaugural ceremony of the International Conference on Mathematical Modeling, Nigeria

considers the impact of multiple control measures for the transmission of the disease. The topics covered by other presenters showed the potential of mathematical modeling in addressing major issues related to health. These included: Stability and Bifurcation Analysis of Ebola Deterministic Model; Solution of SIQR Model by Homotopy Analysis Method; Modelling and Analysis of an Age Structure Model of HIV; A Nonhydrostatic Atmospheric Model for Weather Simulation over Minna; Modelling the Transmission Dynamics of Hepatitis-B Virus (HBV) in the Presence of Vaccination and Behavioural Change; Mathematical Model for Dynamics of Tuberculosis Vaccination; and Mathematical Modelling of Measles Epidemiology in Nigeria. A presentation was also made on 'Regional Centre for Integrated River Basin Management, Kaduna Nigeria [A Category II UNESCO Water Center]'.

The event concluded with closing remarks and votes of thanks by representatives of the collaborating institutions of the event, as well as distribution of certificates. Holding of a similar event in 2017 was also announced by Dr. Ismail AbdelHamid.

International Workshop on Applications of ICTs in Education, Healthcare and Agriculture (23-25 November 2015, Rabat, Morocco)

The 2nd International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture' was held in Rabat, Morocco, on November 23-25, 2015. Hosted by the National Institute of Posts and Telecommunications (INPT), Rabat, the event was jointly organized by COMSATS, the Islamic Educational, Scientific and Cultural Organization (ISESCO) and the Inter-Islamic Network on Information Technology (INIT). The event was part of a series of workshops on the theme that aim at strengthening the capability of software and application developers, researchers and students involved in designing practical applications for addressing challenges related to education, healthcare and agriculture.

The inaugural session of the Rabat workshop was held on November 23, 2015. Prof. Ahmed Tamtaoui,

International Institutions/Organizations represented at the Rabat Workshop

- Iranian Research Organization for Science & Technology (IROST), Iran;
- Gedaref Digital City Organization, Sudan;
- Ministry of Higher Education, Research, Science and Technology, Gambia;
- Council for Scientific and Industrial Research (CSIR), Ghana;
- National Research Centre (NRC), Egypt;
- PMAS-Arid Agriculture University, Pakistan;
- University Alioune Diop of Bambey, Senegal;
- Royal Scientific Society (RSS), Jordan;
- Uganda National Council for Science and Technology (UNCST), Uganda;
- Industrial Research and Consultancy Centre (IRCC), Sudan;
- Ministry of Telecommunication and Information Technology, Palestine;
- Al-Quds University, Palestine; and
- COMSATS Institute of Information Technology (CIIT), Pakistan.



Mr. Ismail AbdelHamid addressing the inaugural ceremony of International Workshop on Applications of ICTs in Education, Healthcare and Agriculture, Morocco



Director Research INPT presided over the session. Around 60 subject specialists, researchers and students from 11 countries, namely Egypt, Gambia, Ghana, Iran, Jordan, Morocco, Pakistan, Palestine, Senegal, Sudan, and Uganda, participated in the inaugural ceremony.

The workshop had the participation of over 30 students and faculty members of INPT. Furthermore, students and faculty members belonging to various other Moroccan institutions also participated in the event, these included: Mohammadia School of Engineering (EMI), Rabat; National School of Mines of the City of Rabat (ENSMR), Rabat; National School of Applied Sciences (ENSAK), Kenitra; National School of IT and Systems Analysis (ENSIAS), Rabat; National Institute of Statistics and Applied Economics (INSEA), Rabat; Université Sidi Mohammed Ben Abdellah, Fez; and National Institute of Agricultural Research (INRA), Rabat.

The technical proceedings of the event were spread over six technical sessions comprising of talks and presentations. These introduced applications of ICTs having impact on the management issues related to Health, Education and Agriculture in the developing world.

A competition entitled 'APPIDEA 2015' announced on the second day of the workshop inspired the participation of Ph.D students from various institutes of Rabat, including Mohammed (V) University Rabat, INRA and INPT. Mentored by the subject experts of the event, groups of students presented innovative ideas for developing new applications in the thematic areas of the workshop. These mentors belonged to Pakistan, Iran, Palestine, Morocco, and Sudan. The exercise was meant to simulate a multicultural research environment. A panel of judges evaluated the application ideas





based on pre-determined criteria. The top two presentations were awarded cash prizes during the closing ceremony. The event was formally closed by Dr. Ahmed Tamtaoui, Director of Research, INPT, on November 27, 2015, who called for efforts on part of developing countries to strengthen their capacities in ICT innovation. Dr. AbdelHamid, Science Expert ISESCO, in his vote of thanks appreciated the efforts of the organizers for making the event successful. Mr. Abdul Majid Qureshi, Research Scholar, COMSATS, delivered the concluding

remarks. The event concluded with certificate distribution to the speakers and participants.



Group photo of participants of the International Workshop on Applications of ICTs

COMSATS' Discussion Forum on Science for a Sustainable Future (10 November 2015, Islamabad, Pakistan)

COMSATS observed the 'World Science Day for Peace and Development 2015' (WSDPD 2015) on November 10, 2015, by holding a discussion forum on 'Science for a Sustainable Future', in Islamabad, Pakistan, in collaboration with the Pakistan Academy of Sciences (PAS). The event marked the third continuous celebration of the World Science Day for Peace and Development, organized by COMSATS as part of its focused efforts towards sensitization and science popularization in the host country. The forum was presided over by Dr. Ishfaq Ahmad, Chairman Board of Governors, National Centre for Physics, Islamabad, and former Advisor to the Prime Minister of Pakistan on Science and Technology.

Speaking on the occasion, Dr. Ahmad emphasized that the modern scientific and technological developments, among other things, can help societies to duly utilize the renewable energy sources, like hyrdo, solar, wind and geo-thermal, for reducing dependence on fossil fuels. He opined that pure and social sciences should be taught and applied simultaneously for achieving sustainable development. He also urged the need to harness the potential of young scientists and supporting their work to help



prepare them to take up future challenges. Dr. Ahmad praised COMSATS for its leadership role in regularly celebrating the World Science Day in Pakistan, and appreciated the organization's continuous pursuit of its mission of promotion of science for sustainable development.

Earlier in his opening remarks, the Executive Director COMSATS expressed COMSATS' intent to continue holding the World Science Day celebrations in partnership with relevant organizations and use it as means to sensitize policy makers, politicians and the public at large on the role of science-led development. Expressing his consciousness of the darker aspects of S&T, he deemed the orientation of the international day towards Peace and Development very significant. He highlighted the significance of the World Science Day 2015 with respect to it falling between two significant events relating to sustainable development, i.e., adoption of Sustainable Development Goals (SDGs) by the UN General Assembly on 25th September 2015 and the 21st Conference of Parties (COP21) of the United Nations Framework Convention on Climate Change, Paris, France, from 30th November to 11th December 2015.

The President of PAS, Dr. Anwar Nasim, noted that the role of the Academy has always been to sensitize the political leadership about the centrality of science towards social and economic progress. He highlighted that science has remained grossly under projected as a driving force for development. Dr. Nasim said that the World Science Day is an opportunity to renew commitments to prepare young scientists to take leadership roles in future. He urged the developing countries to make stronger and concerted efforts to beat the odds impeding growth of their S&T profiles. He pledged the Academy's support for any useful initiative aiding the efforts made in this direction.



Dr. Ishfaq Ahmad presiding over COMSATS' Discussion Forum



Participants of COMSATS' Discussion Forum on Science for Sustainable Future

The technical deliberations of the event comprised of three presentations. Dr. Ayesha Razzaque, an Independent Education Consultant made a presentation on 'Status of Science in a contemporary Pakistani Society'. She presented a case for creating a science-literate society based on the fact that such societies make informed and sustainable choices, particularly in areas of healthcare, energy, and environment.

Dr. Faisal F. Khan, Director, Institute of Integrative Biology, CECOS University of Information Technology and Emerging Sciences; Peshawar, Pakistan, in his presentation, 'The Case for Next Generation of Life Sciences', asserted the urgent need to encourage start-ups to bridge the gap between academia and industry in Pakistan, especially with regard to the emerging sciences. He considered emerging trends related to Synthetic Biology as one such opportunity for Pakistan and urged the relevant quarters to take immediate measures to optimally benefit from it.

Dr. M. Pervaz, Director General, Hydrocarbon Development Institute of Pakistan (HDIP), Islamabad, Pakistan, talked about 'Energy Options for a Sustainable Future', and advocated technology-transfer and technical cooperation among the developing countries, and diversification of energy supply as means for achieving reduced energy-related imports.

The participants resolved to voice concerns raised during the forum to relevant quarters to help create the necessary political will at the national level in support of a S&T-led development. They also called for enhanced efforts on part of the government in deploying resources to address the state of Science and Technology. In this regard, the apathy of media to project relevant issues was noted with dismay.

International Symposium on Light and Life (14-16 October 2015, Islamabad, Pakistan)

A three-day International Symposium on 'Light and Life' was organized by COMSATS to observe the UNESCO International Year of Light and Light-based Technologies (2015). The symposium was organized in collaboration with COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, on October 14-16, 2015. The sponsors of the event included the Abdus Salam-International Centre for Theoretical Physics (ICTP), Italy; the Ministry of Science and Technology (MoST), Government of Pakistan; Higher

Highlights of Discussions at the WSD 2015 Forum

- Scientifically literate societies make informed and sustainable choices, therefore basic knowledge of science and scientific method should be widespread in a society.
- Schools should teach children science with due consideration of its practical uses in life.
- Media can help in diffusing the necessary scientific knowledge to the society.
- There is a need to encourage start-ups to bridge the gap between academia and industry in Pakistan.
- Poor quality of science education, redundant teaching methods, and lack of incentives are some policy problems impeding proportion of technology transfer and entrepreneurship at later stages.
- Emerging trends related to Synthetic Biology are a good opportunity for Pakistan, relevant quarters to take immediate measures to optimally benefit from it.
- Science and technology strategy should be revised and priority areas should be rationalized based on their potential socio-economic benefits to suitably tap the potential of the technological revolution worldwide.



Minister for S&T presiding over inaugural session of International Symposium on Light and Life

Education Commission (HEC) of Pakistan; and Pakistan Academy of Sciences (PAS).

The event was inaugurated on October 14, 2015 by the Minister for Science and Technology, Government of Pakistan, H.E. Mr. Rana Tanveer Hussain. The inaugural ceremony was attended by a gathering of over 150 researchers, scientists, students, and officials from relevant organizations in COMSATS' Member States. Apart from the Inaugural address by the Minister, the ceremony featured speeches and remarks by Dr. S.M. Junaid Zaidi, Rector CIIT; Prof. Dr. Aslam Khan, Advisor (Physics) CIIT and the Chairman of the event's Organizing Committee; Prof. Dr. Aslam Baig, Distinguished National Professor, National Centre for Physics (NCP), Islamabad, Pakistan, and Dr. I.E. Qureshi, Executive Director COMSATS.



UNESCO's designated Focal Point for activities related to International Year of Light and Light-based Technologies in Pakistan, Prof. Aslam Baig, gave a historic overview of the International Year of Light (IYL) at the inauguration ceremony. Important landmarks that the IYL celebrated were recounted by him including: 1000th Anniversary of Ibn Al-Haytham's 'Book of Optics'; 200th Anniversary of Fresnel's discovery of the Wave nature of light; 150th Anniversary of Maxwell's discovery of electromagnetic waves; 100th Anniversary of Einstein's Theory of General Relativity; and 50th Anniversary of the discovery of cosmic microwave background radiation.

Themes of Technical Sessions

- Light Detection & Harvesting
- Light Emitting Devices
- Light-Matter Interactions
- Light-Based Technologies
- Photochemistry & Photobiology
- Optoelectronics & Photonics
- Imaging Science, and
- Quantum Informatics.

Speaking on the occasion, the Executive Director COMSATS apprised the audience of COMSATS Secretariat's close working relations with the UNESCO Headquarters, formalized through signing of a Memorandum of Understanding in March 2015



(details in Section 5). It was informed that subsequent discussions on modes and means of cooperation with UNESCO led to the holding of the present symposium. Stressing the potential of S&T to help the developing countries prosper, Dr. Qureshi highlighted the nexus between economic growth, technological advances, and political and social patronage.

In his Inaugural Address, H.E. Rana Tanveer noted the importance of the theme of the event and noted the wide-spread uses and applications of light and light-based technologies in developed and developing world in various fields, including defense, energy, communication, environmental monitoring, remote sensing, medicine, industrial research, and information technology.

The technical proceedings of the Symposium that commenced after the inauguration comprised of 16 technical sessions, 9 plenary talks, 14 invited talks, 26 contributed talks, and 17 poster presentations. A total of 49 talks were presented on relevant topics by speakers from Bangladesh, China, Germany, Iran, Ireland, Italy, Japan, Pakistan, Sudan, Turkey, UK, and USA. Over 175 participants benefitted from the expertise and experiences of these and other speakers of the event. The technical deliberations of the Symposium had started a day before with a Pre-symposium Workshop on 'Technology of Light Emitting Diodes' that had a participation of over 100 faculty members and students of relevant disciplines.

The Symposium highlighted the great potential of light and light-based technologies for benefitting the societies at large. Special emphasis was on Solar Energy

Some Distinguished Speakers of the Symposium

- Dr. M. Yasin Akhtar Raja, Professor, Department of Physics and Optical Science & Center for Optoelectronics and Optical Communications, University of North Carolina at Charlotte (UNC Charlotte), USA;
- Dr. M. Khizar Bhutta, Research Scientist, Center for Optoelectronics and Optical Communications University of North Carolina at Charlotte (UNC Charlotte), USA;
- Dr. Zahid Yaqoob, Research Scientist, Laser Biomedical Research Center (LBRC), Massachusetts Institute of Technology (MIT), Massachusetts, USA;
- Dr. Zahid Hussain, Division Deputy for Scientific Support, Advanced Light Source Division, Lawrence Berkeley National Laboratory (LBNL), Berkeley, USA;
- Prof. Hani Elsayed-Ali, Professor & Eminent Scholar, Electrical & Computer Engineering, Old Dominion University (ODU), Norfolk, USA;
- Prof. Gregory John Tallents, Department of Physics, University of York, UK;
- Prof. Dr. Wolfgang Sandner, Director General and CEO, ELI-DC International Association AISBL, The "Extreme Light Infrastructure" ELI, Berlin, Germany;
- Prof. Maria Allegrini, Professor, Dipartimento di Fisica "E. Fermi", Università di Pisa, Pisa, Italy;
- Prof. Nabeel Riza, Head of School of Engineering & Chair Professor of Electrical & Electronic Engineering, University College Cork (UCC), Cork, Ireland;
- Dr. Hakan Altan, Associate Professor, Department of Physics, Middle East Technical University (METU), Ankara, Turkey;
- Dr. Shabaz Anwar, Kyoto University, Japan;
- Prof. Dr. M. Iqbal Chaudhry, Qourvo, USA.



Pre-symposium workshop on Technology of LEDs by Dr. Khizar Bhutta

Harvesting, LEDs, OLEDs, Lasers, Imaging Science even below the diffraction limit with applications in Bio-Sciences and Biotechnology, Environmental Monitoring, Nano Science particularly Nanoscopy, Photonic Devices, Accelerator-based Light Sources, including Synchrotron and Free Electron Lasers, and Extreme Ultraviolet Lasers, as well as Quantum Information Processing.



The research work presented by subject experts showed how changing the material properties on the atomic scale can help in having more control over the materials response for desirable use, such as efficient conversion of light and maneuverability over the conventional laws of light dispersion, refraction, scattering, etc. Such controls could help minimize losses in the light-based technologies. Considerable emphasis was laid on the solid state lighting (SSL). The

scientists highlighted the potential of SSL to become competitive with conventional light sources in the future that could greatly increase their share in the general illumination manufacturing industry and relevant markets.

The Concluding Ceremony of the event was presided over by Dr. Shaukat Hameed Khan, Coordinator General COMSTECH, Islamabad, Pakistan. His presentation on the occasion gave the historic background of the event's theme and highlighted Pakistan's profile related to light-based technologies. Dr. Arshad Saleem Bhatti, Dean Faculty of Science, CIIT, suggested creating an 'Optical Society of Pakistan', similar to the one in the USA. A Symposium Report was presented by Dr. Aslam Khan that summarized technical proceedings of the event.



Chief Guest alongwith the participants of the International Symposium on Light and Life

A significant outcome of the event was that the speakers from USA, UK, Germany, Italy and Turkey offered research collaborations and opportunities at their respective institutes to the participants and other eligible Pakistanis for graduate studies. The event concluded with distribution of shields and certificates to the distinguished guests, speakers, participants and organizers of the event.

National Training Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions, and Small Scale Industries (12-16 October 2015, Accra, Ghana)

As part of its International Programme for capacity-building and to help Member States in achieving self-reliance in repair and maintenance of scientific equipment,



COMSATS organized a training workshop on 'Repair and Maintenance of Scientific Engineering Equipment' in Accra, Ghana, from October 12-16, 2015, under the auspices of the Ministry of Environment, Science, Technology and Innovation (MESTI), Government of Ghana. The workshop was hosted by Ghana Atomic Energy Commission (GAEC), an affiliated institution of MESTI. The workshop was the second event on the theme organized by COMSATS in Ghana during the last two years. The first one was held in 2013 with the support of COMSATS' Centre of Excellence in Ghana, the Council for Scientific and Industrial Research (CSIR). So far,

more than 300 scientists, engineers, teachers and technicians have been trained under this programme. This was the 10th specialized hands-on training on the theme organized by COMSATS that started back in Sudan in 2004, followed by similar national events in other developing countries, like Syria, Senegal, Egypt, Tunisia, Iran and Oman.

The hands-on training to technicians of GAEC on repair and regular maintenance of important scientific instruments was provided in several sessions. Mr. Arif Karim and Mr. Faisal Ghazanfar from Pakistan Council of Scientific and Industrial Research (PCSIR) rendered their services as resource persons for the workshop. The technical sessions comprised hands-on training complemented by lectures on the theme of the workshop. To consolidate the trainees' learning, the participants were also provided the opportunity to work on the faulty equipment under the supervision of the experts to

Summary of the Workshop	
No. of Participants Trained	14
No. of Equipment repaired/diagnosed	26
Lectures Delivered	6



practice their knowledge acquired during the technical sessions.

Fifteen engineers and lab technicians were trained for indigenous repair of a number of equipment and instruments at the various GAEC facilities, including Organic lab; Ghana Research Reactor (GHARR-1); Non-Destructive Testing Unit; Biotechnology and Nuclear Agriculture Research Institute (BNARI); Environmental Protection and Waste Management Centre (EPWMC); Radiological and Medical Sciences Research Institute (RAMSRI); as well as Applied Radiation Biology Centre (ARBC) of the Radiological and Medical Sciences Research Institute (RAMSRI).

Instruments/Equipment Repaired During the Course of the Workshop

- Fourier Transform Infrared Spectrophotometer;
- X-ray Machine;
- Spectronic 21D UV/Vis;
- Blood Auto Analyzer;
- Content Analyzer;
- Gas Chromatograph and Gas Chromatograph Auto Injector;
- FTHS 900 Microwave Lab-station;
- PCR machine;
- Freeze Dryer and Microwave Lab-station; and
- Gene Amp PCR System 9700.

Prior to the workshop, the Director General GAEC, Prof. Benjamin Jabez Botwe Nyarko, held meeting with the visiting delegation from Pakistan, comprising Mr. Nisar Ahmad, Deputy Director (Systems), COMSATS, and the two workshop resource persons from PCSIR. The meeting was also attended by the Director GAEC, Dr. Francis G. Ofosu. The Director General expressed his gratitude to COMSATS for accepting GAEC's request of organizing the workshop at his institution and hoped that the activity would result in not only repairing the expensive faulty equipment, but also helping in building scientific capacity of the human resources at GAEC. Mr. Ahmad briefed about the workshop methodology and also highlighted the success of the series of workshops held under the theme. After the meeting, the workshop commenced with an opening ceremony, with Dr. Francis Ofosu, Deputy Director of National Nuclear Research Institute, addressing the gathering and introducing the visiting resource persons.



One-on-one discussions were also held with the experts by the participants on various issues involving design of electronic-based devices where they shared their rich experiences.

At the brief closing ceremony of the workshop held on October 16, 2105, Dr. Ofuso, commended COMSATS for organizing the much needed national workshop in Ghana. He also expressed his satisfaction over the successful conclusion of the workshop. He particularly praised the visiting experts for their hard work and knowledge imparted to the participants.



COMSATS' official with participants of the workshop held at Ghana Atomic Energy Commission (GAEC)

The participants were awarded certificates during the inauguration of COMSATS' the 3rd General Meeting on October 27, 2015.

3rd Consultative Regional Workshop on National Innovation System and Intellectual Property (5-7 October 2015, Tunis, Tunisia)

The Third Regional Consultative Workshop on 'National Innovation System and Intellectual Property' for the Arab Region, was held on October 5-7, 2015, in Tunis, Tunisia. This workshop, hosted by the Tunisian National Commission on Education, Science and Culture (TNCESC), was the last of the series of workshops on the theme organized by COMSATS in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO) and the Inter-Islamic Network on Information Technology (INIT). In line with the objectives of the series of workshops, this intellectual exchange activity was also meant to benefit middle-to-high level policy makers, IP practitioners and academicians.

The event encouraged deliberations on the contours of National Innovation System (NIS) and IP Regimes in the Arab World to develop capacities of relevant



Assistant Secretary General TNCESC presiding over the inaugural session of the Third Regional Consultative Workshop on 'National Innovation System and Intellectual Property'

stakeholders from the Member States of COMSATS, ISESCO and INIT, and sensitize them on the need of having strong NIS/IP policies for effectively meeting relevant challenges. The three-day workshop was inaugurated on October 5, 2015, by the Assistant Secretary General, TNCEESC, Mr. Mohamed Kamel Essid.

Twenty-five subject specialists, IP practitioners, experts and government functionaries, from 12 countries including China, Egypt, Jordan, Lebanon, Malaysia, Mauritania, Morocco, Oman, Pakistan, Palestine, Sudan and Tunisia, participated in the inaugural session. Twenty national and international institutions/organizations were represented in the workshop.

On the occasion, Mr. Essid conveyed the greetings of the Tunisian Minister of Education and the President of TNCEESC. He considered efficient and a well thought out National Innovation System and IP regime important for any developing country to prosper.



In his message read out on the occasion by Mr. Abdul Majid Qureshi, Research Scholar, the Executive Director COMSATS called for creating enabling environment for innovation by harnessing the creativity of their people and enterprises, developing good management practices and facilitating linkages among different stakeholders.

The seven technical sessions comprised of talks and presentations that

highlighted the importance of a robust National Innovation System and its impact on the promotion of a culture of innovation and the economy, particularly in the Arab region. Country case-studies highlighting successfully implemented NIS/IP frameworks/models in the region were also presented.

The technical deliberations of this event addressed challenges faced by developing countries in implementing effective IP regimes. Key issues relating to patent filing, and a need for greater awareness of IP was stressed and related benefits to researchers and small industry were highlighted. A concluding round table discussion



Assistant Secretary General TNCEESC giving certificates to the participants of the regional workshop

resulted in key recommendations for improving the state of awareness on the subject in the developing world. These called for:

- adopting a “utility model” law to take advantage of scientific research and innovation results;
- creating a Network of Intellectual Property in the Arab and Islamic countries to share knowledge, experiences and expertise;
- supporting Arab and Islamic countries on the development of regulations relating to intellectual property in the legislative, technical and human and institutional fields; as well as
- organizing workshops in the future in cooperation with the intellectual property offices on writing and documenting the patents.

A resolution proposed by Executive Director INIT, Engr. Tahir Naeem, was adopted unanimously by the participants of the workshop, urging the need to promote NIS/IP in common Member States through continued dialogue and capacity-building activities.

The workshop concluded on October 7, 2015. At the closing ceremony, the Assistant Secretary General, TNCESC, lauded the organizers for sensitizing the stakeholder governments on key issue of NIS/IP for socio-economic development. Mrs. Wafa El Alami of ISESCO presented a vote of thanks on behalf of the organizers.

5th International Workshop on Internet Security: Enhancing Information Exchange Safeguards (14-18 September 2015, Ankara, Turkey)

The 5th International Workshop on ‘Internet Security: Enhancing Information Exchange Safeguards’ was jointly organized by COMSATS, the Islamic Educational, Scientific and Cultural Organization (ISESCO), the Inter Islamic Network on Information Technology (INIT), COMSATS Institute of Information Technology (CIIT), Pakistan, and the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Turkey, on September 14-18, 2015, in Ankara, Turkey. The event aimed to train IT professionals of developing countries, enabling them to collectively address issues and challenges related to information and Internet security.





Subject experts delivering seminar during the Internet Security workshop

The event was inaugurated by Prof. A. Arif Ergin, President of the Scientific and Technological Research Council of Turkey (TUBITAK), Government of Turkey, on 14th September 2015.

About 35 young researchers, practitioners, academicians, system administrators and programmers working in the field of Internet/information security, from Brunei Darussalam, Jordan, Nigeria, Maldives, Morocco, Tanzania, Pakistan, Palestine and Turkey, benefited from the proceedings of the workshop.

The training modules covered during the technical sessions of the event pertained to various important subjects relating to organizational security. These included cryptography and network security; ethical hacking; cyber security and information security design principles; and security information and event management systems.

Resource Persons of the Workshop

- i Dr. Haider Abbas, Research Fellow/Assistant Professor, Center of Excellence in Information Assurance, King Saud University, Saudi Arabia;
- ii Dr. Malik Najmus Saqib, Assistant Professor, COMSATS Institute of Information Technology (CIIT), Pakistan;
- iii Mr. Zafar Mir, Regional Manager, Information Security Risk, MENA–HSBC, UAE;
- iv Mr. Asad Raza, School of Electrical Engineering and Computer Science (SEECs), National University of Sciences and Technology (NUST), Pakistan;
- v Mr. Uğur Altun, Cyber Security Institute, Turkey; and
- vi Mr. Yakup Korkmaz, Cyber Security Institute, Turkey.

Agist of technical deliberations of Internet Security Workshop is as follows:

Dr. Haider Abbas delivered lectures on various topics related to 'organizational security'. He explained the concepts of Cyber Warfare and Electronic Warfare through various case studies. Highlighting the international standards and best practices for information security, he discussed some security policies and their objectives and procedures. He also touched upon the concepts of Risk Assessment, and conducted practical exercises on information security policy/procedures writing, information assets identifications & valuation, and risk assessment & treatment. Dr. Malik Najmus Saqib covered the topics related to 'Cryptography and Ethical Hacking'. He explained Brute-Force attack, encryption and



decryption, computational security, cryptanalysis, classical ciphers, caesar cipher, monoalphabetic cipher, polyalphabetic ciphers, transposition ciphers, etc. He conducted practical exercises on ethical hacking, including penetration testing, external and internal security, in-house and outsourced security assessments, etc.

Mr. Uður Altun explained the basics of penetration testing and highlighted its importance. He also elaborated the steps involved in pentest from the perspectives of pentester and customer through real life experiences.

Mr. Asad Raza imparted hands-on training to the participants regarding enumerating windows users, open ports, and running services, hacking windows operating systems, using encoders to bypass antivirus and firewalls, cracking WEP, WPA and WPA2, capturing secure/insecure passwords, installation and configuration procedure, OSSIM dashboard, integration with Snare and Nessus, and prevention methods.

Mr. Yakup Korkmaz explained the key characteristics of advanced persistent threats using real-world examples. He explained the techniques and tools for detection and analysis of such threats.

Mr. Zafar Mir covered topics related to information security design principles, emerging cyber threats and their significance, dissecting a cyber attack, various phases in planning a cyber attack, recent distributed denial of service attacks, possible mitigation solutions to service attacks, etc.

The Concluding Ceremony of the event was held on 18th September 2015. Speaking on the occasion, Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, offered the human and technological resources available with COMSATS to address issues related to Internet/information security. He thanked ISESCO, INIT, CIIT and SESRIC for joining hands with COMSATS to organize this important workshop. Prof. Huseyin Hakan Eryetli, Director (Publication & IT), SESRIC, thanked the local and foreign participants, as well as the partner institutions for jointly organizing this event.



Group photo of the participants and organizers of the International Workshop on Internet Security

National Seminar on South-South Cooperation: Towards a Sustainable Future (14 September 2015, Islamabad, Pakistan)

COMSATS commemorated the UN Day for South-South Cooperation by holding a national seminar on 'South-South Cooperation: Towards a Sustainable Future' in Islamabad, Pakistan, on 14th September 2015. The event was held in collaboration with the Centre for Policy Studies (CPS) of COMSATS Institute of Information Technology (CIIT), Islamabad, at its premises. The Seminar drew about 65 participants, including policy makers, members of civil society, diplomats, representatives of UN agencies and other intergovernmental organizations, academicians, scientists, economists, CIIT faculty members and students.

The Director-General Institute of Strategic Studies Islamabad (ISSI), Ambassador (R) Masood Khan was the chief guest on the occasion. The Executive Director COMSATS, Dr. I.E. Qureshi, and Assistant Country Director and Chief Development Policy Unit of the United Nations Development Programme (UNDP), Mr. Shakeel Ahmad addressed the gathering at the inaugural session, which was followed by a technical session. The technical session of the seminar comprised of four insightful presentations and talks on different aspects of South-South cooperation.

Ambassador (R) Sohail Amin, President Islamabad Policy Research Institute (IPRI), Islamabad, gave a historic overview of South-South cooperation. He noted that the United Nations Conference on Technical Cooperation among Developing Countries (1978), and high-level United Nations Conference on South-South Cooperation (2009) constitute major milestones

"...South-South cooperation will play a key role in the implementation of Agenda 2030 for Sustainable Development and the achievement of the Sustainable Development Goals.some developing countries in the South are pursuing institutional innovations particularly in the areas of education, health, food security, employment and poverty reduction.South-South cooperation can provide cost-effective and replicable solutions to the challenges faced by many developing countries..."

(Ambassador (R) Masood Khan, Director-General Institute of Strategic Studies Islamabad (ISSI))

"...South-South cooperation can be powerful mechanisms to establish multi-stakeholder partnerships (and) help identify solutions to common development challenges through knowledge sharing, technology exchange, and collective action. ...COMSATS is a living example of a long-haul commitment to South-South cooperation programmes. ...obligations stipulated in the SDGs have more or less been a part and parcel of COMSATS' programmes..."

(Dr. I.E. Qureshi, Executive Director COMSATS)

"...South-South Cooperation is becoming more of a necessity than just one of the options for achieving growth and human development in the South. ...UN system has been working with countries in the global South to promote peer-learning, and stands ready to help all countries to achieve the Sustainable Development Goals...UNDP is committed to maintain and increase its support..."

(Mr. Shakeel Ahmad, Assistant Country Director UNDP)



Ambassador (R) Masood Khan presiding over National Seminar held in connection with UN Day on South-South Cooperation



in the evolution of South-South and triangular cooperation. Major developments in South-South cooperation also date back to the preceding decade that have accelerated the developing countries' drive for collective self-reliance. These developments included the founding of the Non-Aligned Movement (NAM) in 1961 and the Group of 77 (G-77) in 1964. He stressed on South-South cooperation as an essential mechanism to support the overall development objectives of the developing countries and to

strengthen cooperation among their economic, environmental, cultural and social sectors.

Prof. Dr. Qamar-uz-Zaman Chaudhry, Special Advisor to the Secretary-General of World Meteorological Organization (WMO), discussed key aspects of climate change in the global development framework. He was of the view that all the nations would have to contribute towards reducing the GHG emissions, and respond to the climate change by adapting to the new conditions and taking measures to mitigate its effect.

Dr. Vaqar Ahmed, Deputy Executive Director Sustainable Development Policy Institute (SDPI), Islamabad, highlighted the role being played by SDPI, an independent think tank based in Pakistan, in the global efforts for sustainable development. He pointed out some factors that helped social sector development in Pakistan: rise of media; rise of independent judiciary; rise of self-funded/self-organized efforts by communities; and empowered youth. Dr. Ahmed noted that the major threats to Pakistan's development are its shrinking exports in global markets and its declining trade with the neighboring countries. He asserted that there is a need for coordinated extraordinary efforts by the private-sector and the government to come out of the crisis.

The last speaker of the technical session, Dr. Talat Anwar, Advisor CPS, touched upon the emerging economic trends in the context of South-South cooperation. He noted that intra-regional trade has expanded to become regional trade. He informed



Chief Guest, organizers, speakers and participants of the South-South Cooperation Day event

that the countries have liberalized trade through foreign direct investment (FDI) and that middle and low-income countries have received a great inflow of FDI that has played a great role in their development. He noted that the Kingdom of Saudi Arabia has the highest FDI (as percent of GDP), i.e, 6.8%, and that Pakistan has not been able to fully benefit from FDI due to its security situation. He was of the view that China needs to direct its savings to other developing countries for a mutual gain, as it would also earn dividends to China in the long run.

Dr. Anwar also recounted some challenges to economic cooperation that the developing countries are facing. These included the substantial non-tariff barriers; challenges to alter anti-dumping; as well as perception of sharply unequal benefits to individual countries.

The seminar concluded on the note of optimism towards South-South cooperation as effective means to benefitting the developing countries' efforts for development.

National Training Workshop on Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions, and Small Scale Industries (23-27 August 2015, Rustaq, Oman)

The five-day national workshop on 'Repair and Maintenance of Scientific Engineering Equipment in Universities, Research Institutions and Small Scale Industries', was jointly organized on August 23-27, 2015, under COMSATS-ISESCO Cooperation Programme-2015.

The event was organized under the aegis of Omani Ministry of Higher Education (MoHE) in Rustaq, Oman. This workshop hosted by College of Applied Sciences Rustaq, was 8th of the theme being organized by ISESCO and COMSATS to build capacity of researchers, academicians, technicians, and engineers of common Member States.

Dr. Said Bin Hamed Al Rebaie, Secretary General of Education Council, Oman, inaugurated the Workshop. Some of the distinguished guest of the ceremony were: Mrs. Wafaa El Alami, Head of Planning, Information and Documentation Centre, ISESCO; Dr. Abdullah Mohammed Al Sarmi, Undersecretary,

Representation of Omani Institutions at the Inauguration

- Ministry of Higher Education (MoHE);
- Ministry of Manpower;
- The Research Council of Oman;
- Sultan Qaboos University (SQU);
- University of Nizwa;
- Sohar University;
- A'Sharqiyah University (ASU);
- Military Technological College (MTC);
- German University of Technology in Oman (GUtech);
- International Maritime College Oman (IMCO);
- Waljat College of Applied Sciences; and
- College of Applied Sciences, Rustaq.



Group photo of the participants of the inauguration of the workshop

Ministry of Higher Education, Oman; and Dr. Hammod Amur Hamood Al Wardi, Dean College Applied Science, Rustaq, Oman.

The workshop was comprised of 10 technical sessions including lectures, hands-on training and visits to different labs of College of Applied Sciences, Rustaq, and Sultan Qaboos University, Muscat. Mr. Arif Karim and Mr. Faisal Ghazanfar from Pakistan Council of Scientific and Industrial Research (PCSIR), Pakistan, were the two resource persons of the workshop.

During the technical sessions, the participants were provided training on troubleshooting and repairing of Spectrophotometer Systems; Flame Photometer Systems; Atomic Absorption system and XRF system; Thermal Analyzer; Gas Chromatographic Systems; HPLC Systems; Electron Microscopes; Laboratory Balances; Thermal Equipments (Oven & Furnace); and pH Meters. The lectures were complemented by hands-on training and visits to the labs of College of Applied Sciences, Rustaq and Sultan Qaboos University, Muscat. During the visit to Sultan Qaboos University, the participants showed keen interest in different labs especially 'The Central Analytical and Applied Research Unit (CAARU)'.

The workshop resulted in training more than thirty (30) participants, including engineers, researchers and students of various institutions from various cities of Oman. Under the supervision of the workshop resource persons, the trainees, on the basis of the knowledge and skill acquired during the workshop, were able to repair and made operative some of the expensive equipment which were lying faulty for many years in the Omani institutions.

The event was given due importance by the Government of Oman. The closing ceremony of the event, held on August 27, 2015, was presided over by H.E Dr. Abdullah Bin Mohammad Bin Al Sarmi, Under-Secretary MoHE, Sultanate of Oman. The ceremony concluded with certificate distribution among the participants and on the note of hope that scientists, engineers and technicians trained in the workshop will further train their colleagues in their respective organizations.

Some of the Faulty Equipment Repaired during the Workshop

- Spectrophotometer;
- Analytical Balances;
- pH Meter;
- Conductivity Meter;
- Thermogravimetric Analyzer;
- Centrifuge;
- Digital Function Generator;
- Power Supply of CNC;
- Hot plates; and
- Precision High Ampere power supply.

(approximate worth of instruments repaired was more than US \$ 25,000)



Engr. Arif Karim imparting hands-on training on repair and maintenance of scientific equipment

Lecture on UNFCCC, Kyoto Protocol, and Beyond (16 June 2015, Islamabad, Pakistan)

A lecture entitled 'UNFCCC, Kyoto Protocol, and Beyond' was held under COMSATS' Science Diplomacy programme on June 16, 2015. The lecture was delivered by COMSATS' Science Ambassador (Climate Change), Prof. Dr. Athar Hussain, at Pakistan Academy of Sciences to a gathering of over 90 participants including, environmental sciences professionals, academicians, scholars, representatives of relevant government departments, and members of civil society in Pakistan.

In his talk, Dr. Hussain presented data regarding Green House Gas (GHG) Emissions and Global Warming (GW); the phenomenon of Hiatus in Global Warming, and requirements of Climate Stabilization. He also highlighted the measures that the nations listed in the Annex-1 of the Protocol are expected to take in order to cut back on GHG emissions. The carbon dioxide reduction mechanisms stipulated in the Kyoto Protocol and related developmental challenges were also highlighted. It was noted that Pakistan accounts for less than 1% of the total global CO₂ emissions volume, which is extremely low. However, in solidarity with the global efforts for addressing the needs of the Climate Change phenomenon, Pakistan should make efforts to get propriety rights for Green technology; establish Green industries; and develop and maintain more comprehensive national GHG inventory. He advocated constant dialogue among various national stakeholders to come up with more comprehensive carbon reduction plans for short to long term.



During the event, Dr. Arshad Saleem Bhatti, Coordinator COMSATS' Science Diplomacy Programme, gave a brief introduction of COMSATS' future initiatives in the field of Science Diplomacy. He quoted the examples of Pugwash Conferences on Science and World Affairs, and CERN Laboratories as successful examples of Science Diplomacy. He stated that COMSATS has been a practitioner of Science Diplomacy. He was hopeful that the activities of the programme will be aligned with important prevalent issues that call for strong coordination in science diplomacy at regional and global levels, such as Climate Change, Health, Sustainable Development and Cyber-security.

Speaking on the occasion, the Executive Director COMSATS asserted the need for more pragmatic and evidence-based decision-making regarding commitments made towards international climate change policies, consortia, and agreements, especially in view of the geo-political developments, developmental disparities and economic limitations of the developing countries. He also highlighted the major forms in which



Prof. Dr. Athar Hussain with participants of his Science Diplomacy lecture

Diplomacy and Science co-exist in relation with the term 'Science Diplomacy' that started being coined in 2012. Dr. Qureshi informed the audience that COMSATS has started the necessary capacity-building of its designated officials with cooperation from The World Academy of Sciences (TWAS). He also informed about the participation of a COMSATS' official in the 2015 AAAS-TWAS Summer Course on Science & Diplomacy, held in Trieste, Italy in 2015.

The talk was followed by the signing of a Memorandum of Understanding (MoU) to formalize cooperation between TWAS and COMSATS in the field of Science Diplomacy. The Executive Director COMSATS, Dr. I.E. Qureshi, signed the MoU on behalf of COMSATS.

International Conference on Agriculture, Food Security and Biotechnology (8-9 June 2015, Cairo, Egypt)

Under its cooperation agreement with ISESCO, COMSATS organized the International Conference on 'Agriculture, Food Security, and Biotechnology' in Egypt, on June 8 - 9, 2015. The event was held at COMSATS' Centre of Excellence in the country, the National Research Centre (NRC). Besides ISESCO, the event had the



Dr. Mohamed Hashem presiding over the inaugural function of the International Conference on Agriculture, Food Security and Biotechnology, Egypt

patronage of International Union for Conservation of Nature (IUCN), and Centre for Environment and Development for the Arab Region and Europe (CEDARE).

The inaugural ceremony of the event was presided over by Dr. Mohamed Hashem, Vice President for Research Affairs & International Relations, NRC. In his remarks on the occasion, Dr. Hashem expressed NRC's appreciation to COMSATS and ISESCO for giving the opportunity to host the Conference and appreciated its relevance for addressing key regional and global issues. He emphasized that though Egypt has made progress in applying biotechnology in agriculture there is further need for consolidating gains from these technologies in agricultural and other sectors.

Speaking on the occasion, Mr. Amr Abdel-Meguid, Regional Program Manager CEDARE, considered biotechnology the key technology of the 21st century, and highlighted the opportunities that agricultural biotechnology has to offer for the national development, especially of the developing countries. Mr. Salah El Din El Gafrawi, ISESCO Representative in Egypt, also mentioned several emerging issues and challenges confronting the agriculture sector, and urged the researchers to take on revolutionary roles to promote advanced agricultural systems in Islamic Countries. The message of the Executive Director COMSATS, Dr. I. E. Qureshi, was read out by Ms. Huma Balouch, Sr. Assistant Director (Programmes) COMSATS. Dr. Qureshi noted that the developing countries are progressively adopting and adapting to



International Speakers presenting their research work at the Egypt Conference

agricultural biotechnology to meet their needs including those pertaining to food quality, food security, and sustainable agriculture. He considered the event important in encouraging debate and exchange of ideas related to modern biotechnological approaches to meet sustainable agriculture and food security challenges in the developing world.

The conference was global in its scope, both in terms of programme and participation, and structured to give the participants every opportunity to explore and debate a wide range of issues under the theme. The conference explored a diverse range of issues, covering the scientific, technological, environmental, ethical, economic, and social issues related to the use of modern biotechnology.

The event attracted about 100 participants, including senior policy makers, scientists from national and international academic and research organizations, representatives of non-governmental and community-based organizations, private sector, and the media. Several critical issues related to the potential applications of biotechnology to agriculture and food security in developing countries were

addressed in a series of plenary thematic sessions, featuring 30 technical talks by distinguished speakers from COMSATS' Member Countries, Bangladesh, Egypt, Pakistan, Senegal, Sudan, Sri Lanka, and Nigeria.

Several specific suggestions emerged during the conference as to areas of activity and issues, some of which pertained to:

- Establishment of a scientific network for information exchange between member countries of COMSATS and ISESCO regarding climate change, food production system, automation and precision farming;
- Working out joint research proposals that can be promoted by COMSATS, ISESCO, IUCN, and CEDARE for seeking funds;
- Creation of working groups for mapping the strengths and weaknesses in biotechnology R&D in common Member States;
- Establishment of relevant competent committees for necessary decision-making on the use of genetically modified products and preservation of biodiversity; and
- Integration of relevant institutions concerning agriculture policy, rural development, and research strategy in member countries.

International Symposium on Impacts of Atmospheric Extreme Events on Geo-Surface in a Changing Climate (14-15 May 2015, Colombo, Sri Lanka)

The two-day International Symposium on 'Impacts of Extreme Atmospheric Events on Geo-Surface in a Changing Climate' was jointly organized by COMSATS and two of its Centres of Excellence, the Industrial Technology Institute (ITI), Sri Lanka, and the International Center for Climate and Environment Sciences (ICCES), China, on 14-15 May 2015, in Colombo, Sri Lanka.

The symposium was inaugurated on 14th May 2015, by the Secretary, Ministry of Higher Education & Research, Government of Sri Lanka, Mr. P. Ranepura. Speaking at the occasion, Mr. Ranepura stated that the developing countries are being hugely affected by the extreme atmospheric events, in the form of droughts, floods, cyclones, etc., and considered the symposium in-line with the current needs and priorities of the countries of the South. He hoped that the event will be successful in facilitating collaboration among the participating scientists for studying the impacts of



Distinguished guests and participants of the inaugural function of symposium on Impacts of Extreme Atmospheric Events on Geo-Surface in a Changing Climate

atmospheric extreme events as well as working out related mitigation strategies.

Speaking on the occasion, Mr. Niroshana Perera, Chairman ITI, stated that studying the extreme atmospheric events and their impacts on different regions of the world is a collective responsibility, and his country is ready to play an active role in this regard. He thanked COMSATS for providing an opportunity to ITI to host this long-awaited international event in Sri Lanka.

In his address at the occasion, the Executive Director COMSATS overviewed the legal and political developments at the international level, since the global realization of the significance of climate change leading to United Nations Framework Convention on Climate Change (UNFCCC) in Rio conference of 1992. He informed that COMSATS is dedicated to promoting international cooperation among the countries of the South for collectively addressing their common challenges. In this regard, he mentioned the capacity-building activities executed by COMSATS in this field, as well as the research activities of COMSATS' International Thematic Research Group on 'Climate Change and Environmental Protection'.

Prof. Zhaohui Lin, Director ICCES, China, stated that there is sufficient evidence to believe that changes are taking place in the climatic extremes in different regions of the world. He informed that most developing countries, including China, are aware of the need to promote research activities and undertake collaborations in this field with a view to understand the mechanisms and impacts of extreme atmospheric events. He congratulated and thanked ITI for hosting this important event and playing its part in the overall efforts to limit climate change.

During the inaugural session, a Memorandum of Understanding (MoU) between ITI and ICCES, for the establishment of the Climate Change Research Centre was also signed. Dr. Muditha Liyanagedara, Acting Director General ITI, and Prof. Zhaohui Lin, Director ICCES, China, signed the MoU on behalf of their respective organizations. After the signing, a keynote address was delivered by Prof. Ajith de Alwis, Senior Professor, Department of Chemical and Process Engineering, University of Moratuwa, Sri Lanka.

Speakers of the International Symposium

- Prof. Zhaohui Lin, Director ICCES, China;
- Dr. G.A.C. Gomes, Associate Professor (Electrical Engineering), Department of Electrical & Electronics Engineering, Universiti Putra Malaysia, Malaysia;
- Dr. Shahina Tariq, Chairperson, Department of Meteorology, COMSATS Institute of Information Technology (CIIT), Pakistan;
- Prof. Dr. G. M. Tarekul Islam, Institute of Water and Flood Management (IWFM) of Bangladesh University of Engineering and Technology (BUET), Bangladesh;
- Dr. Ali Akbar Noroozi, Soil Conservation & Watershed Management Research Institute, Iran;
- Dr. Senaka Basnayake, Head, Department of Climate Change and Climate Risk Management, Asian Disaster Preparedness Centre, Thailand;
- Dr. He Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences, China;
- Prof. A.K.M. Saiful Islam, Institute of Water and Flood Management (IWFM), Bangladesh University of Engineering and Technology (BUET), Bangladesh;
- Ms. Anoja Seneviratne, Director, Mitigation Research and Development Division, Disaster Management Centre, Sri Lanka;
- Dr. Hao Chen, Director General, Sichuan Institute of Atomic Energy, China;
- Dr. Thusitha Sugathapala, Senior Lecturer, Department of Mechanical Engineering, University of Moratuwa, Sri Lanka; and
- Ms. Anusha Warnasooriya, Deputy Director, Department of Meteorology, Sri Lanka.



The countries represented during the symposium included, Malaysia, Pakistan, Bangladesh, Iran, Thailand, China, and Sri Lanka. Attended by about 60 participants, the symposium facilitated the exchange of scientific and technological expertise and know-how among the participating researchers belonging to various developing countries, and enhanced their capacities to understand, predict and monitor extreme atmospheric events and to work-out necessary measures for their mitigation at national, regional and international levels.

A wide range of topics under the theme of the symposium were covered by the speakers, which pertained to: Temperature Extremes in China: Observation, Modeling and Prediction; Climate Indices: An Effective Tool for Drought Prediction in South Asia; Development of the CAS Earth System Model and Its Applications on Extreme Events; Characteristics of Hydro-Climatic Extremes in Bangladesh; Analysis of the Extreme Rainfall Indices Over Bangladesh; Risk Management of Rare Disaster Events; Detection Change of Dust Storm in the West of Iran During 2000 to 2010; Climate Change Adaptation for Disaster Risk Reductions in Sri Lanka; Emergency Food for Disasters Preserved by Irradiation; Local Solution to Global Climate Change Issue: Zero-Carbon Economic Model for Sri Lanka – Making a Reality; Mitigation of Disasters Due to Severe Climate Conditions: From Policy to Practice; and Effective Utilization of Weather and Climate Information and Adaptive Technological Measures for Enhancement of Agro-Ecosystem Resilience: A Case Study on Transdisciplinary Stakeholder Approach; and Climate and Change in Climate in Sri Lanka.

International Scientific Spring – 2015 (16-20 March 2015, Islamabad, Pakistan)

The National Centre for Physics (NCP), Islamabad, Pakistan, and the Abdus Salam International Centre for Theoretical Physics (AS-ICTP), Trieste, Italy, jointly organized the International Scientific Spring-2015 (ISS-2015) from March 16-20, 2015, at NCP, Islamabad, Pakistan. Following the practice of supporting ISS every year, COMSATS contributed to the this year's event by supporting international travel of some of, the foreign participants from COMSATS Member States. These included one Iranian, one Bangladeshi and two Egyptian scientists.

In all 18 foreign delegates participated in the event from Algeria, Bangladesh, Egypt, Georgia, Germany, Iran, Iraq, Italy, Japan, Korea, Russia, Saudi Arabia, Sweden, and USA. Apart from foreign participants, some 320 local scientists/researchers took part in the technical proceedings of the event from all over Pakistan. During the five-day International Scientific Spring, over 150 oral presentations (including invited/contributed talks, video lectures) and posters on specific research topics were presented by the renowned foreign and local speakers and researchers.



Executive Director COMSATS in a meeting with an international participant of ISS-2015

A wide array of topics covered under the four themes of the event were as follows:

- i. Light-Matter Interaction: Lasers, Synchrotron Radiation, Opto-electronics;
- ii. Condensed Matter and Nano Sciences: Lower dimensional materials (0, 1 & 2D materials, multi-layers and thin films), functional nanostructures (synthesis, characterization and applications), nano-material characterization using advanced techniques;
- iii. Plasma Physics: Basic plasma physics, space plasmas, quantum plasmas, Non Maxwellian plasmas, laser-induced plasmas;
- iv. Particle Physics & Cosmology: Phenomenology of elementary particles, Flavor physics, B-meson physics, neutrino physics, inflation gravity waves, black hole physics, dark matter, Si detectors in particle physics.



Senior officials of COMSATS Secretariat availed the opportunity to interact with the invited foreign speakers and explored possible avenues for scientific collaboration.

COMSATS' Round Table Meeting on Science Diplomacy in the South (25 February 2015, Islamabad, Pakistan)

A Round Table meeting on Science Diplomacy in the South, was organized by COMSATS Secretariat in Islamabad, Pakistan, on 25th February 2015, in view of the direction given by COMSATS Coordinating Council at its 17th meeting held in May 2014 (Section 1). COMSATS' Science Diplomacy Programme was also launched during the event. The programme is geared towards improving international relations among developing countries and supporting their efforts to achieve foreign policy objectives through S&T cooperation.

The meeting was chaired by Mr. Amjad Hussain B. Sial, Special Secretary (Policy Planning), Ministry of Foreign Affairs, Government of Pakistan. In his address on the occasion, Mr. Sial considered it imperative for developing nations to remain abreast with latest scientific advances for objective and informed decision-making in the face of emerging national and trans-boundary challenges, like those pertaining to environment, health and food security. Noting that the Government of Pakistan is cognizant of the need for using scientific interactions for strengthening international relations, he stated that the government is "indebted to COMSATS for a timely initiative to focus on such a key area of national interest".



Mr. Amjad B. Sial, Special Secretary (Policy Planning), Ministry of Foreign Affairs, presiding over the Roundtable Meeting



General Discussion Session of the Round Table Meeting in progress

Speaking on the occasion, the Executive Director touched upon various facets of science diplomacy and informed that operationally COMSATS has been engaged in all activities relating to Science Diplomacy since its establishment in 1994. Emphasizing the need for an adaptive model of Science Diplomacy that suits the interests of developing countries, he stated that COMSATS is well-placed to play a central role for Science Diplomacy. He attributed this distinctive position to a large pool of scientific human resources available in COMSATS' S&T Centres of Excellence; its expertise for organizing training programmes for S&T capacity building; and the coordinating role the organization is playing for joint international research projects that aim at addressing common issues in developing countries under the programme of 'International Thematic Research Groups'.

Dr. Arshad Saleem Bhatti, Coordinator of COMSATS' Science Diplomacy Programme, in his remarks, cited the examples of international collaborative research projects, where scientists belonging to different nations have been working together despite the political differences between their countries.

The highlight of the event was the keynote address delivered (through Skype) by Dr. Peter McGrath, Coordinator of Science Diplomacy/Science Policy Programme of The World Academy of Sciences (TWAS), Italy. Dr. McGrath considered science diplomacy crucial for finding solutions to cross-boundary problems, such as climate change, pollution, infectious diseases, fisheries, and water resources, and quoted some examples from around the world of how diplomacy and science resulted in finding common grounds among competing nations. He highlighted some initiatives taken by TWAS under Science Diplomacy Programme. He also lauded COMSATS, ECO-Science Foundation, ESCWA and Nelson Mandela African Institute of Science and Technology (NM-AIST) for their institutional support in promoting Science Diplomacy.

Answering to some questions from the participants, Dr. McGrath considered it important, especially in the context of the developing countries, to identify common important issues of a region for inter-state coordination. Appreciating the role of COMSATS in S&T-led development in the South for over 20 years, he considered the organization an important international player in the field of science diplomacy.

Suggestions, ideas, and concerns were shared by the COMSATS' designated Science Ambassadors and participants during a general discussion session steered by the President of the Pakistan Academy of Sciences (PAS), Dr. Anwar Nasim. Discussion was held to identify ways in which COMSATS Science Diplomacy programme can be made effective and tailored to addressing the needs of the developing countries. Among the distinguished participants of this discussion were: Prof. Dr. Zabta Khan Shinwari, Secretary General, PAS; Mr. Amjad Hussain, Joint Scientific Adviser (IL), Ministry of Science and Technology, Government of Pakistan; Ambassador Fauzia Nasreen, Advisor/Head, Centre for Policy Studies, COMSATS Institute of Information Technology (CIIT); Ms. Sadia Malik, Assistant Director (Internal Coordination), Pakistan's Ministry of Foreign Affairs; and senior officials and academics from COMSATS Secretariat and CIIT.

During the General Discussion Session, the participants deliberated on matters ranging from popularization of science, quality of science education at the grass root level, to resolving the regional disputes with neighbouring countries through effective diplomatic means backed by sound scientific expertise.



Chief Guest alongwith COMSATS' Science Ambassadors and other participants of COMSATS' Round Table Meeting

4

ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

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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 expertise in the respective fields, 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 each other's scientific capacities for a coherent R&D activity under the guidance of the designated Group Leader of the Lead Centre.

ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

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

4th Meeting of COMSATS' ITRG on 'Climate Change and Environmental Protection' (May 16, 2015, Colombo, Sri Lanka)

The 4th meeting of COMSATS' ITRG on 'Climate Change and Environmental Protection' was held on May 16, 2015, at Industrial Technology Institute (ITI), Colombo, Sri Lanka, in conjunction with the International Symposium on 'Impacts of Extreme Atmospheric Events on Geo-Surface in a Changing Climate' (May 14-15, 2015, Colombo, Sri Lanka) (details in Section 3).

The meeting was chaired by the Group Leader, Prof. Zhaohui Lin, Director, International Center for Climate and Environment Sciences (ICCES), China, to review the progress of the joint research project being undertaken by group members, entitled 'Characteristics and Mechanism of the Extreme Climate Events under the Climate Change Background'. The group comprises of scientists and researchers from meteorological departments, scientific and research organizations, and higher





education institutions of various developing countries. The meeting was attended by group members from Bangladesh, China, Iran, Malaysia, Pakistan, Sri Lanka and Thailand.

In his opening remarks, Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, overviewed the objectives of COMSATS' ITRGs approved during the 13th Coordinating Council Meeting (Italy, 2010). He highlighted the facilitator's role being played by COMSATS for the exchange of technical know-how and sharing of necessary laboratory resources among the group members.

In his welcome address, Prof. Lin recalled the history, objectives, and

technical contributions and achievements made by the members of the group. He shed light on the capacity-building activities held under the umbrella of the group, including international workshops, short-term trainings, and post-graduate scholarships, some of which were executed with support from COMSATS Secretariat. Discussing the future course of action of the group, Prof. Lin proposed to divide the different components of the research project under several sub-groups having a coordinator and members from amongst the ITRG members.

The participants of the meeting presented their progress reports and shared their country-specific meteorological data. It was noted that a joint paper entitled 'Lightning incidents in Mongolia, Geomatics, Natural Hazards and Risk' (March 2015) had been jointly published by two ITRG members, Ms. Doljinsuren Myagmar (Mongolia) and Dr. Chandima Gomes (Malaysia). During the discussions on the joint research project, it was decided that the SAARC Meteorological Research Centre based in Dhaka would be requested to nominate its representative for participating in the activities of the group. The ITRG members agreed to prepare specific proposals based on their research expertise and national priorities to be submitted to relevant ministries and funding

Participants of the 2nd Meeting of ITRG on Climate Change and Environmental Protection

- Dr. Gorakanage Arosha Chandima Gomes, Associate Professor (Electrical Engineering), Department of Electrical & Electronics Engineering, Universiti Putra Malaysia, Malaysia;
- Dr. Shahina Tariq, Chairperson, Department of Meteorology, COMSATS Institute of Information Technology (CIIT), Pakistan;
- Mr. Warnage Ransisi Keerthi Fonseka, Principal Research Engineer, ITI, Sri Lanka;
- Prof. Dr. G. M. Tarekul Islam, Institute of Water and Flood Management (IWFM) of Bangladesh University of Engineering and Technology (BUET), Bangladesh;
- Dr. Ali Akbar Noroozi, Soil Conservation & Watershed Management Research Institute, Iran;
- Mr. K.H.M.S. Premalal, Director, Research and Training, Department of Meteorology, Sri Lanka;
- Mr. Ruwan M. Weerasingha, Senior Deputy Director, Electro Technology Laboratory, ITI, Sri Lanka;
- Dr. Senaka Basnayake, Head, Department of Climate Change and Climate Risk Management, Asian Disaster Preparedness Centre, Thailand;
- Dr. He Zhang, Institute of Atmospheric Physics, Chinese Academy of Sciences, China;
- Prof. A.K.M. Saiful Islam, IWFM-BUET, Bangladesh;
- Mr. Tajammul Advisor (Programmes), COMSATS Secretariat; and
- Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Secretariat.



organizations in their respective countries, with support of COMSATS Secretariat.

The meeting resulted in creating nine sub-groups and designated their respective coordinators and members, in order to effectively execute different components of the research project. The meeting also finalized work plan and time-line for the activities of the afore-mentioned sub-groups during 2015-2016, which entails gathering the

Proposed Sub-groups of ITRG on 'Climate Change and Environmental Protection'		
S#	Title of Sub-group	Coordinators and Members
1	Dust Storms	Dr. Noroozi (Iran) - Coordinator Prof. Lin (China) Dr. Shahina Tariq (Pakistan) Ms. Doljin (Mongolia) NRC, Egypt (potential) KazNU, Kazakhstan (potential)
2	Floods and Landslides	Dr. Shahina Tariq (Pakistan) – Coordinator Dr. Saiful Islam (Bangladesh) Dr. Fonseka (Sri Lanka) Dr. Tarekul Islam (Bangladesh)
3	Droughts	Dr. Zhang He (China) – Coordinator Dr. Noroozi (Iran) Dr. Shahina (Pakistan) Dr. Tarekul Islam (Bangladesh) Dr. Saiful Islam (Bangladesh) Mr. Premalal, Met Office (Sri Lanka) Dr. Basanayake (Thailand)
4	Hydrological Extremes	Dr. Tarekul Islam (Bangladesh) – Coordinator Dr. Saiful Islam (Bangladesh) Prof. Lin (China) Mr. Fonseka (Sri Lanka) Dr. Shahina (Pakistan)
5	Thunderstorm and lightening	Dr. Chandima Gomes (Malaysia) - Coordinator Dr. Basnayake (Thailand) Mr. Nuwan Kumarashinghe (Sri Lanka) Dr. Tarekul Islam (Bangladesh) Ms. Doljin (Mongolia) Dr. Shahina Tariq (Pakistan)
6	Cyclones and Storm surge	Dr. Basnayake (Thailand) - Coordinator Dr. Saiful Islam (Bangladesh) Dr. Tarekul Islam (Bangladesh) Mr. Premalal (Sri Lanka)
7	Air, Water and Land Pollution	Prof. Lin (China) Mr. Fonseka (Sri Lanka) CIIT (Pakistan)
8	Climate Modeling	Dr. Saiful Islam (Bangladesh) - Coordinator Dr. Zhang He (China) - Co-coordinator Dr. Tarekul Islam (Bangladesh) Mr. Fonseka, ITI (Sri Lanka) Met Office, Sri Lanka ICCES (China) Dr. Basnayake (Thailand)
9	Risk Management	Dr. Basnayake (Thailand) Prof. Lin (China)

relevant meteorological data of collaborating countries; preliminary analysis of the data; execution of different segments of the joint research project; and publishing joint research papers based on their collaborative research findings through participation in the group activity. It was decided that the support provided by COMSATS Secretariat would be duly acknowledged in the research publications by the ITRG members.



COMSATS' International Thematic Research Group on 'Mathematical Modeling'

2nd Meeting of COMSATS' ITRG on 'Mathematical Modeling' (December 30, 2015, Abuja, Nigeria)

The 2nd Meeting of COMSATS' ITRG on 'Mathematical Modeling' was held on December 30, 2015, in Abuja, Nigeria, in conjunction with the International Conference on Mathematical Modeling (28-29 December 2015). The meeting was organized by National Mathematical Centre (NMC), Nigeria, which is also the Lead Centre of the Group. The group is executing the joint research project, entitled 'Mathematical Modeling and Simulation of Air and Water Pollution: Effects and Remedies'. The project has the patronage of the Islamic Educational, Scientific and Cultural Organization (ISESCO), under its recent biennial cooperation agreement with COMSATS.

The primary objective of the ITRG meeting was to discuss the progress made by the group since its launching in December 2014, as well as to determine the future course of



action. The meeting was chaired by the designated Group Leader, Prof. B. O. Oyelami, NMC, Nigeria.

In his opening remarks, Prof. Oyelami welcomed the founding as well as new members of the group. He thanked COMSATS and ISESCO for providing group members another opportunity to meet and share their progress in executing the joint research project, as well as to discuss their future plans. He renewed his commitment to earnestly carry out his responsibilities as the Group Leader. Mr. Farhan Ansari conveyed warm wishes on behalf of the Executive Director COMSATS to the scientists and researchers participating in the group activities. He encouraged the participants to seek guidance from the Group Leader in pursuit of their research assignments, and timely submit their progress reports.

The technical session of the meeting commenced with a presentation by Mr. Ansari outlining the mission, structure and technical programmes of COMSATS, particularly the ITRG programme. Subsequently, the Group Leader made a detailed presentation covering the following:

- i. Proceedings and outcomes of the foundation meeting of the Group, including various components of the joint research project;
- ii. NMC's progress with regard to the execution of the assigned research component, i.e., modeling of air pollution for the environment and medical implications; and
- iii. Proposed Action Plan of the Group for the year 2016.

The founding members of the group from Pakistan and Nigeria shared their research progress, as well as sought guidance from the Group Leader regarding the difficulties being faced in executing their assigned research components. The new participants identified different segments in which they were capable and willing to contribute. The meeting resulted in the distribution of research components/activities among the participating researchers for the year 2016, which is as follows:

- i. Prof. B. O. Oyelami (Nigeria), Prof. M. O. Ibrahim (Nigeria), Dr. S. A. Malik (Pakistan), Prof. J. A. Ogidi (Nigeria) and Dr. M. Lam (Senegal) to collaborate to model the transportation and distribution of pollutants in air and water, with a view to assess their impact on ecosystem and environment;
- ii. Prof. B. O. Oyelami (Nigeria) and Dr. O. O. Yaya (Nigeria) to use statistical models to analyze remote-sensing data and satellite images related to air pollution in order to forecast natural disasters;
- iii. Prof. O. Taiwo (Nigeria) and Mr. M. Nashir Uddin (Bangladesh) to

Participants of the 2nd Meeting of ITRG on Mathematical Modelling

- Prof. M. O. Ibrahim, University of Ilorin, Nigeria;
- Dr. Salman Amin Malik, Assistant Professor, Department of Mathematics, COMSATS Institute of Information Technology (CIIT), Pakistan;
- Prof. J. A. Ogidi, Biomathematics Programme, NMC, Nigeria;
- Dr. Othman Al-Mashaqbeh, Assistant Researcher, Royal Scientific Society (RSS), Jordan;
- Dr. Mountaga Lam, Research Scientist, University Cheikh Anta Diop (UCAD), Senegal;
- Prof. Olusola J. Adeniran, Mathematics Programme, NMC, Nigeria; and
- Dr. O. O. Yaya, Special Assistant (Technical) to Executive Director, National Water Resources Institute (NWRI), Nigeria.



collaborate to determine how chemicals, heavy metals, slugs and petrochemical in air or water influence climate change, and cause environmental problems. They would also use models to study factors that enhance carcinogenic and allergic diseases;

- iv. Prof. B. O. Oyelami (Nigeria), Prof. J. A. Ogidi (Nigeria), Mr. M. Nashir Uddin (Bangladesh) and Prof. Xiaodong Zeng (China) to assess how pollutants in the air lead to greenhouse effect and the associated global warming by using different models;
- v. Prof. F. Taiwo (Nigeria), Dr. W. Lugano (Tanzania) and Prof. J. A. Ogidi (Nigeria) to use models to estimate the impact of contaminants on environment, and determine the contribution of industrial pollution towards high prevalence of respiratory diseases and allergies;
- vi. Dr. S. A. Malik (Pakistan), Prof. Xiaodong Zeng (China) and Dr. O. Al-Mashaqbeh (Jordan) to collaborate to develop models that could predict the distribution of pollutants in water;
- vii. Prof. Peter Osanaiye (Nigeria) and Dr. W. Lugano (Tanzania) to ascertain benchmarks for pollution effect from industrial set-ups;
- viii. Prof. B. O. Oyelami (Nigeria) and Prof. F. Taiwo (Nigeria) to use Monte Carlo (MC) Simulation for some stochastic models considered in the project.

The distribution of tasks was formalized through a Memorandum of Understanding that was signed by the participants belonging to Nigeria, Pakistan, Jordan and Senegal. It was agreed that the group will submit to COMSATS an interim report in October 2016 and the final report in September 2017. Moreover, during the



discussion session, the representative of the National Water Resources Institute (NWRI), Nigeria, proposed that COMSATS and the Lead Centre of the group should jointly submit a project proposal to the Executive Director NWRI for exploring the possibility of financial support for the research project. Furthermore, the Group Leader pledged to organize periodic meetings of the Nigerian scientists taking part in the project, for effective execution of their assigned research components.

It was also agreed that the next meeting of COMSATS' ITRG on 'Mathematical Modeling' will be held in conjunction with the next ISESCO-COMSATS International Conference on Mathematical Modeling, which is scheduled to be held in the first quarter of 2017. The ITRG members renewed their commitment to actively participate in the joint research project under the supervision of the Group Leader, and publish joint research papers and monographs/books based on their joint research.

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

The COMSATS' ITRG on 'Agriculture, Food Security, and Biotechnology' was formally launched by COMSATS and the Group's Lead Centre, the National Research Centre (NRC), Egypt, by holding its foundation meeting on 10th June, 2015, in Cairo, Egypt. The meeting took place on the sidelines of COMSATS-ISESCO-NRC joint International Conference on 'Agriculture, Food Security, and Biotechnology' (8th-9th June 2015). In addition to NRC and COMSATS' representatives, the meeting was attended by five scientists and researchers from Industrial Technology Institute (ITI), Sri Lanka; Bangladesh Council for Scientific and Industrial Research (BCSIR), Bangladesh; Industrial Research and Consultancy Centre (IRCC), Sudan; COMSATS Institute of Information Technology (CIIT), Pakistan, and Universite Cheikh Anta Diop (UCAD), Senegal.

The objective of the meeting was to form a group of active research scientists from various institutions of the developing countries that are working in the area of 'Agriculture, Food Security and Biotechnology', and initiate joint research activities under the patronage of COMSATS. The meeting was chaired by the Group Leader, Prof. Dr. Wafaa Haggag, Head of Agricultural and Biological Division, NRC, Egypt.

The meeting commenced with a presentation by Ms. Huma Balouch, Sr. Assistant Director (Programmes), COMSATS Secretariat, focusing on the historical perspective, mandate, structure and technical programmes of COMSATS. During the presentation, Ms. Balouch shed light on the background and objectives of COMSATS' ITRGs, as well as COMSATS' expectations from the Group's foundation meeting. Subsequently, the Group Leader made a detailed presentation on various components of the proposed joint research project of the group. In her presentation, she stressed that agriculture sector needs to provide sustainable food security and economic development in the context of current and future global challenges, and highlighted the critical role of new plant varieties and high quality seed in providing dynamic and sustainable agriculture that can meet these challenges. Further, she noted that the group's project would focus on supporting agricultural R&D in different disciplines, especially for enhancing the productivity of wheat



lines under stressful conditions, using integrated management of resistance, or tolerance lines with formulation of biotechnology products.

During the meeting, establishment of the group and its framework were formalized through a Memorandum of Understanding, which stipulates cooperation between the Group members for conducting joint research, as well as

sharing expertise and lab resources. These members included: Dr. Radhika Samarasekara (ITI-Sri Lanka); Dr. Mazahib Adam (IRCC-Sudan); Dr. Salim Khan (BCSIR-Bangladesh); Dr. Tayyaba Yasmin (CIIT-Pakistan); and Dr. Diegane Diouf (UCAD-Senegal). Based on the discussions held and decisions made during the meeting of the ITRG, NRC proposed a joint research project, entitled 'Biotechnological Approaches to Improve Some Wheat Lines Productivity Under Biotic and Abiotic Stresses'. The proposed joint research project was considered in line with the group's theme.

The participants of the meeting deliberated on broad parameters of the joint research project; defined timeline and procedures for executing the project; identified collaborating institutions/individuals, as well as distributed research activities among themselves. The group members pledged to take an active part and perform their responsibilities diligently, as well as offered to take significant portions of the research to be conducted in their own labs, such as physical and chemical analyses of wheat lines, growth and yield parameters, formulation of products, and detection of plant pathogenic virus and bacteria.

The meeting concluded with the participants' commitment of timely following-up its decisions and further strengthening the group by inducting representatives from relevant institutions as group members.

For the execution of research project, the National Research Centre (NRC), Egypt, being the Lead Centre of the ITRG, has been awarded a



research grant of US\$ 10,000/- as seed money under ISESCO-COMSATS joint research grant programme. The first installment of US \$ 5,000 has been transferred to NRC, Egypt.

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

Launched in 2010, COMSATS' ITRG on 'Natural Products Sciences' has continued research work related to the execution of joint research project, entitled 'Drug Discovery from Nature for Neglected Diseases', under the leadership of the International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan. With regard to the execution of joint research project, the Group has so far made progress as follows:

- The sub-group of Sudan, headed by Dr. Waleed Koko, Medicinal and Aromatic Plants Research Institute, National Center for Research, Sudan, has prepared extracts of more than twenty medicinal plant species of Sudan (with necessary categorization of name, family, local name, part used, and traditional uses) and submitted the same to ICCBS for biological screening, which is under process.
- Dr. Khalid ul Rehman and Dr. Münir Öztürk from Ege University, Turkey, submitted the extracts of five plant species for 20 bioassay screenings at ICCBS, Pakistan.

Moreover, antioxidant, cytotoxicity (3T3 normal cell line), anticancer (PC-3 cancer cell line and Hela cancer cell line), β -glucuronidase, xanthine oxidase, α -glucosidase, urease, phosphodiesterase, and carbonic anhydrase enzyme inhibition, as well as anti-glycation, antileishmanial, and anti-inflammatory activities of medicinal plants were evaluated by using a battery of mechanism-based in-vitro assays. The submitted extracts have been screened against antifungal, insecticidal, phytotoxicity, and brine shrimps lethality assays. On the basis of results, three plants were selected for detailed phytochemical work.

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

Led by COMSATS' Centre of Excellence in Pakistan, COMSATS Institute of Information Technology (CIIT), COMSATS' ITRG on 'Information and Communication Technologies (ICTs)' was formally launched on April 19-20, 2011, in Islamabad, Pakistan. The Group has been continuing its research work related to the execution of joint project, entitled 'e-Solutions for Community using Low-cost Wi-Fi'.

The research project has the following five components:

- i. Enabling ICT Applications Using Long Distance Wi-Fi Networks;
- ii. 3D Graphical Imagery Therapy for Healing Brain Tumors in Children (3DGIT);
- iii. Use of Consumer Technology as Public Access Based Analytical System;
- iv. Precision Agriculture;
- v. e-Learning.

Major project activities undertaken by the Group so far are as follows:

- Implementation of Project-component 'Enabling ICT Applications Using Long Distance Wi-Fi Networks': In the initial phase of this component of the project, performance evaluation and testing of the long distance Wi-Fi equipment was carried out to assess its suitability for the provision of e-solutions to rural communities. The group has the support of COMSATS Internet Services (CIS), which has wide experience of deployment of long-distance Wi-Fi solutions, and COMSATS Secretariat, which is successfully running a Tele-health project in Pakistan for the provision of healthcare services to rural communities.
- Implementation of Project-component '3D Graphical Imagery Therapy for Healing Brain Tumors in Children (3DGIT)': This sub-project aims to provide psychotherapy through computer games to the children having brain tumors. It was awarded a grant of over PKR 11,558,000/- by Pakistan's National ICT R&D Fund. So far, following progress was made in this component of the project:
 - A 3D Graphical Imagery Therapy (GIT) game was developed, which enables children to visualize battle scenes against tumours helping cancer patient children with psychological issues relating to their disease and treatment. Initially, the 3D GIT game was built for personal computers. Later on, the Android version of the game was developed. The therapy game is enabled with all the regional languages of Pakistan, and can also be adapted to any other language.
 - In the pilot phase, the staff members of oncology wards, doctors and paramedics of selected hospitals were sensitized to encourage children to play the game.
 - A number of research papers have been published by the team of the project in Impact Factor ISI Indexed Journals, as well as presented at international forums.
- Planning for Project-component 'Use of Consumer Technology as Public Access based Analytical System': A new project-component, which has been under the consideration of the group, relates to image-evaluation based sensing, using consumer technology, such as mobile phones. The goal is to develop a robust and reliable measuring configuration technique with which experiments in diverse disciplines can be performed, such as measurement and analysis of absorbance, reflection, refraction and scattering phenomena. Other uses could include measurement/analysis/monitoring of human-friendly bacterial growth, and environmental monitoring activities, such as dust in big cities. The proposed timeframe of the project is 36 months, during which five different aspects will be covered by the ITRG members.

Other Planned International Thematic Research Groups

The 18th Coordinating Council Meeting (12-13 May 2015, Colombo, Sri Lanka) had desired that the inactive ITRGs should be formally launched by their respective Lead Centres with support from COMSATS Secretariat. In the light of this decision, COMSATS Secretariat has been corresponding with the Iranian Research Organization for Science & Technology (IROST), Iran, which is the Lead Centre of COMSATS' ITRG on Renewable Energy. As a result of the consultations made in this



regard, the foundation meeting of the ITRG on 'Renewable Energy' is scheduled to be held on 24th August 2016, in Tehran, Iran, in conjunction with the Regional Expert Meeting on 'Renewable Related Energy Focusing' on Microalgae Technology Using Ocean Resources Including Solar and Fuel Cell (scheduled for 22-23 August 2016). As per the standard practice, COMSATS will provide travel grants to selected members of the ITRG in order to facilitate their participation in the foundation meeting, whereas the local expenses will be borne by the group's Lead Centre (IROST).

Moreover, during the 18th Council Meeting, the Lead Centres of the ITRGs on 'Materials Science' and 'Construction Materials' had expressed their inability to launch these groups due to financial constraints. In light of the same, COMSATS Secretariat is making consultations with the relevant Centres of Excellence with a view to identify suitable Lead Centres for these two groups.

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COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

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

COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

Cooperation with ISESCO

Since 2004, COMSATS and ISESCO have been actively collaborating for executing joint activities in different fields of science and technology. These collaborative activities have proved to be productive for both organizations and have contributed to the socio-economic development of their common Member States. The collaboration is reviewed and revitalized through signing of periodic agreements between the two organizations.

During 2015, COMSATS and ISESCO jointly organized the following six capacity-building events (details are covered in Section 3):

- i. International Conference on 'Agriculture, Food Security, and Biotechnology', 8-9 June 2015, Cairo, Egypt;
- ii. National Training Workshop on 'Repair and Maintenance of Scientific Engineering Equipments in Universities, Research Institutions and Small Scale Industries', 23-27 August 2015, Rustaq, Oman;
- iii. 5th International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards', 14-18 September 2015, Ankara, Turkey;
- iv. Third Regional Consultative Workshop on 'National Innovation System and Intellectual Property' for the Arab Region, 5-7 October 2015, Tunis, Tunisia;
- v. 2nd International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture', 23-25 November 2015, Rabat, Morocco;
- vi. International Conference on Mathematical Modeling, 28-29 December 2015, Abuja, Nigeria.





Over 260 scientists, engineers, technicians and industry representatives benefitted from the above-mentioned events. Moreover, the research projects being executed by COMSATS' International Thematic Research Groups (ITRGs) on 'Mathematical Modeling' and 'Agriculture, Food Security and Biotechnology' have been selected for the award of US\$ 10,000/- each, under COMSATS-ISESCO Research Grant Scheme. As a regular component of the agreement, COMSATS continued to maintain and update the Islamic World Science Net (IWSN) web-portal during 2015 (Section 8).

In order to extend cooperation to 2016-17, COMSATS and ISESCO signed a Cooperation Agreement on 15th July 2015, which involves co-organizing several capacity-building events, strengthening of the IWSN web-portal, and supporting joint research projects in common Member States. As per the afore-mentioned cooperation agreement, the following six capacity-building events are scheduled to be jointly organized by the two organizations during 2016.

S #	Activity	Partners	Tentative Dates and Venue
1	1 st Regional Workshop on 'Bio-safety and Bio-security in Life Sciences Research'	ISESCO; COMSATS	April 2016 Islamabad, Pakistan
2	2 nd International Conference on 'Nanomaterials and Nanodevices'	ISESCO; COMSATS; CIIT, Pakistan	July 2016
3	6 th International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards'	ISESCO; COMSATS; CIIT, Pakistan; INIT	September 2016 Rabat, Morocco
4	3 rd International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture'	ISESCO; COMSATS; INIT; CIIT, Pakistan; RSS, Jordan	October 2016 Amman, Jordan
5	2 nd International Conference on 'Agriculture, Food Security and Biotechnology'	ISESCO; COMSATS; NRC, Egypt	November 2016
6	9 th National Training Workshop on 'Repair and Maintenance of Scientific Equipments in Universities, Research Institutions, and Small Scale Industries'	ICPSR (ISESCO); COMSATS	June 2016

Cooperation with UNESCO

Upon completion of their internal clearance processes, the UNESCO Executive Board at its 195th session (15th – 30th October 2014, Paris) and COMSATS Coordinating Council at its 17th Meeting (19th – 20th May 2014), had authorized Director-General UNESCO and the Executive Director COMSATS to sign a cooperation agreement on behalf of their respective organizations. During his visit to Paris, France, the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi, held a meeting with the Director-General UNESCO, Dr. Irina Bokova, and signed a Memorandum of Understanding (MoU) at the latter's office on 18th March 2015. During his meeting with the Director General, the Executive Director noted that the work of his organization has a clear relevance to the current programmes and activities of UNESCO, and is built on a solid foundation of synergies and previous collaborations between the two since 2007.



Executive Director COMSATS and Director General UNESCO signing the MoU

The MoU stipulates that the two intergovernmental organizations would collaborate to mobilize broad-based participation in science, technology and innovation (STI). The MoU signing was witnessed by H.E. Mr. Ghalib Iqbal, Pakistan's Permanent Delegate to UNESCO and Ambassador to France; Dr. Maciej Nalecz, Director & Executive Secretary of the UNESCO International Basic Sciences Programme (IBSP); and Dr. Yoslan Nur, Programme Specialist, Division of Science Policy and Capacity-Building, UNESCO, and Dr. Majid Khan, Director (International Affairs) COMSATS.

Under the framework of the MoU, the first meeting of the Working Group of COMSATS and UNESCO was held on the day of signing of the agreement. The Executive Director COMSATS, and the Director IBSP, UNESCO, leading their respective



Group photo of UNESCO and COMSATS officials after the signing of MoU

delegations met at the latter's office to undertake preliminary discussions of joint future activities. The Executive Director COMSATS was assisted by Dr. Majid Khan, while Dr. Nalecz was assisted by three officials of IBSP, UNESCO, namely Dr. Yoslan Nur, (Programme Specialist), Dr. Ahmed Fahmi (Programme Specialist), and Dr. Jean-Paul Ngome Abiaga (Assistant Programme Specialist).

The working group deliberations set forth a number of joint key initiatives and actions to be taken in strategic priority areas in the coming years. During the meeting, it was agreed that there will be close coordination and cooperation between COMSATS and UNESCO in organizing activities for science advocacy and popularization, organizing an international symposium to commemorate International Year of Light and other science and sustainability related commemorative days of UNESCO (details of some of the events under this cooperation held during 2015 are given in Section 3).

Following the first Working Group meeting, the Executive Director COMSATS also held meetings with senior UNESCO officials, Dr. Siegfried Demuth, Chief Hydrological Systems and Climate Change, Division of Water Sciences, Natural Sciences Sector, UNESCO, and Mr. Kishore Rao, Director, UNESCO's World Heritage Centre, in which he discussed the ongoing and the proposed future activities to be undertaken by CIIT in cooperation with UNESCO. These included:

- establishment of Category-II Regional Water Research Centre (RWRC) at CIIT Abbottabad Campus;
- establishment of Grand-Trunk Museum at CIIT's Wah campus; and
- a collaborative project between CIIT and UNESCO for preserving the archaeological sites of Harappa at a Heritage Centre at CIIT Sahiwal Campus, Pakistan.

Cooperation with TWAS

COMSATS and The World Academy of Sciences (TWAS) reinvigorated their traditional spirit of collaboration and exchange during 2015. Correspondence that began between the two organizations with the visit of the Executive Director TWAS to COMSATS Secretariat in 2014, resulted in signing of an MoU for cooperation in the field of Science Diplomacy. The Executive Director

Some of COMSATS' Past and Future Activities with UNESCO

- Establishment of UNESCO Chair at the COMSATS Institute of Information Technology (CIIT) Wah Campus, Wah, Pakistan;
- Establishment of Category-2 Centre on Water Research, to be established at CIIT Abbottabad Campus, Abbottabad, Pakistan; collaborative partnership for International Year of Crystallography;
- Joint organization of 7 scientific capacity-building events in the common Member States under UNESCO Participation Programme for Biennium 2010-2011 and 2006-2007.



Executive Director COMSATS in meeting with Director World Heritage Conference UNESCO



E.D. COMSATS signing COMSATS-TWAS MoU

COMSATS signed the MoU in the presence of the President, Pakistan Academy of Sciences and other important dignitaries, following the holding of an expert lecture under COMSATS' Science Diplomacy Programme in Islamabad on June 16, 2015. Later, the Executive Director TWAS signed the MoU in Trieste.

Moreover, TWAS maintained its usual presence in COMSATS' statutory meetings through its representatives. Prof. M. H. A. Hassan, Former Executive Director TWAS, who is also the honorary lifetime member of the COMSATS Coordinating Council, represented TWAS in the 18th Meeting of Coordinating Council (12-13 May 2015, Colombo, Sri Lanka).

Earlier in February 2015, Dr. Peter McGrath, Coordinator of Science Diplomacy/Science Policy Programme, TWAS, participated in the COMSATS' Roundtable on Science Diplomacy in the South through video-conference and delivered a keynote address on the subject. The participation of TWAS officials in COMSATS' activities has been instrumental in adding value to the same and enhancing the experience of the participants.



Dr. Peter McGrath delivering a keynote lecture during the Roundtable meeting on Science Diplomacy through video link

The cooperation formalized by signing of the MoU on Cooperation in Science Diplomacy also resulted in TWAS hosting the training of Mr. Abdul Majid Qureshi, an official of COMSATS on the AAAS-TWAS Summer Course on Science & Diplomacy held on June 8-12, 2015 (details in Section 8).

COMSATS' cooperation with TWAS for the joint publication of the series, titled 'Excellence in Science' continued in 2015. The series has helped in identifying and documenting the strengths and weaknesses of S&T institutions from the developing world in order to put their scientific capacity to a better use for achieving South-South and North-South cooperation. During 2015, profile of International Centre for Integrated Mountain Development (ICMOD), Nepal, was developed under the said cooperation. The publication is in the final stages of editorial work, after which it will be shared with COMSATS for printing.



Participants of the Summer Course on Science & Diplomacy including COMSATS' official

Cooperation with SESRIC

In November 2015, COMSATS and the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC) reached an agreement to collaborate for the promotion of scientific activities in the areas of mutual interest for the socio-economic development of common Member States. A Memorandum of Understanding in this regard was signed by the Director General SESRIC on 5th November 2015, in Ankara, and the Executive Director COMSATS on 9th November 2015, in Islamabad.

The proposal of having an MoU between the two organizations was discussed during the meetings held by COMSATS' officials, Mr. Tajammul Hussain, Advisor (Programmes) and Mr. Farhan Ansari, Sr. Assistant Director (Programmes), with H.E. Ambassador Musa Kulaklikaya, Director General, SESRIC, and Prof. Huseyin Hakan Eryetli, Director (Publications and IT Department), on the sidelines of the 5th International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' (September 14-18, 2015, Ankara, Turkey). Subsequently, the broad parameters of the MoU were agreed upon by the two organizations.

A Brief Introduction of SESRIC

SESRIC is a subsidiary organ of the Organization of Islamic Cooperation (OIC), having mandate to: collate, process and disseminate socio-economic statistics and information on and for the utilization of its member countries; study and evaluate the economic and social developments in the member countries to help generate proposals that will enhance cooperation among them; and organize training programmes in selected fields geared to the needs of the member countries, as well as to make efforts for achieving the general objectives of the OIC. SESRIC also acts as the major research arm of the OIC, whereby it is assigned the task of preparing background documents for the multitude of economic, social and technical cooperation meetings and conferences held at different levels under the umbrella of the OIC every year.

The specific activities expected to be performed under this MoU, inter alia, include:

- i. Organization of workshops, trainings, conferences and seminars in common Member States of COMSATS and OIC, in order to build trained scientific human resources in areas of scoping, data collection and collaboration with a view to analyze the data in support of future strategies and policies in the field of Science and Technology. Priority, in this regard, would be given to hands-on and vocational training opportunities.



Group photo after a meeting attended by officials of COMSATS Secretariat, SESRIC and INIT

- ii. Sharing of data, statistics, studies, documents, and publications relevant to the scientific and economic standings, as well as information related to universities, R&D organizations and S&T sector of the common Member States; and
- iii. Execution of joint research studies aimed at assessing the socio-economic needs of the common Member States, as well as identifying means of facilitating their sustainable development.

The MoU would be implemented through development of specific programmes to be jointly executed by the two organizations during 2016-17.

Interaction with Host Country, Pakistan

The success of COMSATS' programmes largely depends on the organization's strong working relations with the Governments of its Member States. This is particularly true in the case of Islamic Republic of Pakistan, a Member State of COMSATS where the Secretariat of COMSATS is permanently located. Pakistan is generously contributing towards the Secretariat's operational expenses, as well as providing patronage to the organization's flagship projects in the country. In view of the same, regular liaison, interaction and consultations are made with the focal Ministry in Pakistan, the Ministry of Science and Technology (MoST), as well as other government departments. Some key interactions in this respect are as follows:

Briefing to Incumbent Chairman Consultative Committee

The new Federal Secretary Ministry of Science & Technology, Mr. Fazal Abbas Maken, was invited to COMSATS Secretariat for a briefing on the programmes and activities of COMSATS for the promotion of science and technology in Member States. The Executive Director COMSATS, introduced COMSATS as an inter-governmental organization and briefed the Federal Secretary about the Ministry's key role in COMSATS' operations especially as the Federal Secretary is an ex-officio Chairperson of COMSATS Consultative Committee, which comprises of high officials of COMSATS' Focal Ministries and government departments in the Member States. Dr. Qureshi apprised the Secretary that several programmes of COMSATS, such as International Thematic Research Groups distinguish it from its contemporary international organizations; whereby scientists from affiliated Centers of Excellence and other relevant institutions in developing countries carry out joint R&D activities in areas of critical importance to sustainable development. These areas include, Climate Change, Environmental Protection, Food Security, and Renewable Energy. The Federal Secretary was informed that COMSATS plays its mandated international role in harmony with other similar organizations such as UNESCO, ISESCO and



TWAS, and that COMSATS has so far organized/supported over 220 capacity-building events in a number of Member States.

The briefing also focused on the preparations for the then upcoming 3rd General Meeting and 3rd Consultative Committee meeting, for which support of the Government of Pakistan was sought.

Coordination with the Ministry of Foreign Affairs, GOP, in connection with Ghana Meetings held in October 2015

COMSATS Secretariat sensitized the Ministry of Foreign Affairs, Government of Pakistan, regarding the 3rd Commission Meeting and the 3rd Consultative Committee Meeting held in Accra, Ghana, during the month of October 2015. The Ministry was requested to play its role through its diplomatic missions in the Member States of COMSATS to ensure active participation by high profile decision-makers from their governments. Moreover, a dinner meeting, hosted in honour of the Ambassadors of Member States to apprise them regarding the importance of the two statutory body meetings of COMSATS held in Ghana, also had the representation from the Ministry (details in Section 1).

Coordination with Ministry of Finance, Government of Pakistan, in connection with COMSATS' Endowment Fund

Continuous coordination was made with the Ministry of Finance, Government of Pakistan, for the release of US\$ 1 Million towards COMSATS' Endowment Fund as per Pakistan's commitment made during the 2nd General Meeting of COMSATS, hosted by the Government of Pakistan (Islamabad, April 2012). The Ministry has agreed to release US\$ 0.1 million during the financial year 2015-16. Directives have been issued by the Ministry to release the committed amount as a special supplementary grant. Necessary budget provision for release of the remaining US\$ 0.9 million has been earmarked for the financial year 2016-17.



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The Executive Director and other 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 Centres of Excellence, as well as to participate in international meetings and to develop partnerships and cooperation mechanisms with relevant institutions.

INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

Visit to Nigeria (December 28-31, 2015)

Mr. Farhan Ansari, Sr. Assistant Director (Programmes), COMSATS Secretariat, visited Abuja, Nigeria, on 28-30 December 2015, in connection with the International Conference on Mathematical Modeling (Section 3), and meeting of COMSATS International Thematic Research Group on Mathematical Modeling (Section 4). Both the activities had the support of ISESCO and COMSATS' Centre of Excellence in the country, the National Mathematical Centre (NMC). On the sidelines of the two Nigeria events, Mr. Ansari held meetings with officials from the Federal Ministry of Science and Technology (FMST), Government of Nigeria; NMC; and Pakistan's High Commission in Abuja.

Meeting at the Federal Ministry of Science and Technology (FMST)

A meeting was held with Dr. Habiba Lawal, Permanent Secretary, FMST, Government of Nigeria, on 31st December 2015, at the boardroom of the Ministry. Also present during the meeting were the respective Directors and senior officials of different departments of the Ministry; an official of NMC; and Mr. Asim Ali Khan, Head of Chancery, High Commission of Pakistan in Abuja, Nigeria.

The purpose of the meeting was to brief the Nigerian Permanent Secretary about the following:



Meeting in progress at FMST, Abuja

- i. COMSATS and its ongoing programmes in Member States;
- ii. COMSATS' past and ongoing collaboration with Nigeria, including the successful organization of the afore-mentioned events in Abuja;
- iii. Key outcomes of the 3rd General Meeting of COMSATS (27th-28th October 2015) and the 3rd Consultative Committee Meeting (26th October 2015), Accra, Ghana; and
- iv. Support needed from FMST for enhancing Nigeria's participation in the programmes and activities of COMSATS.

Mr. Ansari stated that NMC-Nigeria has been consistently participating in the annual meetings of COMSATS Coordinating Council (participated in 16 out of a total of 18 meetings held so far). Moreover, he shed light on Nigeria's participation in the meetings of the Commission and Consultative Committee held in Ghana (October 2015), in which Nigeria was represented by Mr. Abayomi Oguntunde, Director, Department of Bioresources Development, FMST, and Prof. A.R.T. Solarin, Director NMC. Discussing the key outcomes of the meetings, Mr. Ansari presented to the Permanent Secretary the detailed Minutes of the Consultative Committee Meeting as well as Rapporteur General's Report, and other relevant documents of the 3rd General Meeting of COMSATS. Discussing the support provided by COMSATS towards the scientific capacity-building of Nigeria, it was informed that COMSATS has, so far, jointly organized three capacity-building events and two ITRG meetings in Nigeria; provided travel grants to 19 scientists/students, as well as awarded postgraduate scholarships to 14 Nigerian students for studies at COMSATS Institute of Information Technology (CIIT), Pakistan.

He also shed light on COMSATS' planned activities in 2016, and welcomed participation of Nigerian scientists and researchers in the same. Mr. Ansari also handed over to the Permanent Secretary the invoice of Nigeria's Annual Membership Contribution (AMC) to COMSATS for financial year 2015-16, which he considered vital for enhancing Nigeria's participation in the future programmes and activities of COMSATS.

The Permanent Secretary was appreciative of COMSATS' enormous support towards the scientific capacity-building of Nigeria. She pledged her Ministry's commitment to effectively liaise with COMSATS in future and to personally ensure that the matter of Nigeria's AMC to COMSATS would be settled during the year 2016.



COMSATS' official with Permanent Secretary and other officials of FMST-Nigeria

She also expressed pleasure on the successful organization of the meetings of COMSATS' statutory bodies in Ghana, as well as the international conference and ITRG meeting in Abuja. She pledged to circulate the announcements of the future capacity-building events of COMSATS among the 16 agencies under FMST, as well as other S&T organizations in the country, with a view to identify most suitable candidates for participation.

Meeting at the High Commission of Pakistan, Abuja

Mr. Ansari visited the High Commission of Pakistan in Abuja and met with H.E. Lt. Gen. (R) Agha M. Umer Farooq, High Commissioner of Pakistan, and Mr. Asim Ali Khan, Head of Chancellery, on 31st December 2015. The honourable High Commissioner was briefed about the ongoing programmes and activities of COMSATS, with special reference to its collaboration with Nigeria. The honourable High Commissioner was pleased to learn about the activities of COMSATS and commended COMSATS' efforts to enhance Nigeria's involvement in its programmes. He pledged to fully support the activities of COMSATS through the High Commission of Pakistan in Abuja, which is also accredited to another Member State of COMSATS, i.e., Ghana. He informed that the announcement of postgraduate scholarships offered by CIIT was widely circulated in Nigeria, and as a result about 800 students have submitted their online applications to CIIT. He took keen interest in the postgraduate scholarships offered by other Centres of Excellence of COMSATS, including those offered by Iranian Research Organization for Science & Technology (IROST), Iran, and pledged to circulate this information among the relevant universities and departments of Nigeria and Ghana. He also suggested CIIT to consider the possibility of initiating undergraduate scholarship programmes for the Member States, especially for the benefit of African countries. He pledged to facilitate in mobilizing payment of the Annual Membership Contribution of the Government of Nigeria to COMSATS.



Mr. Farhan Ansari with H.E. Lt. Gen. (R) Agha M. Umer Farooq

Visit to Iran (December 24-26, 2015)

The Executive Director COMSATS, Dr. I.E. Qureshi, visited Islamic Republic of Iran from December 24-26, 2015, for participation in the Mustafa Prize 2015. The visit also provided him an opportunity to visit COMSATS' Centre of Excellence in Iran, the Iranian Research Organization for Science and Technology (IROST), as mandated by the Coordinating Council of COMSATS.

Participation in Mustafa Prize 2015

On December 25, 2015, the Executive Director attended the Mustafa Prize Ceremony upon invitation from the Mustafa Prize Foundation. Held for the first time, the Mustafa Prize awarded high-valued prizes in four categories of: (i) Life Science and Medical

Sciences; (ii) Nano Science and Nanotechnologies; (iii) Information and Communication Science and Technologies; and (iv) Top Scientific Achievement in other fields. Achievements of only two scientists were recognized for the year under the second and fourth categories, and each of them got a cash prize of US\$ 500,000/- and a Mustafa Prize medal. The winners in these categories were, respectively, Prof. Omar M. Yaghi, Co-Director of Kavli Energy Nanosciences Institute, University of California, Berkeley, USA; and Prof. Jackie Y. Ying, CEO and faculty member of the Institute of Bioengineering and Nanotechnology of Singapore, Singapore. Both Laureates achieved international fame by virtue of their highly innovative works, bringing about enormous benefits to society. It was noted that these two contemporary Muslim scientists had revolutionized the medical and chemical sciences with a potential of bringing unlimited benefits to the mankind.



Mustafa Prize 2015 Ceremony

Dr. Qureshi also interacted with local and foreign S&T leaders participating in the Mustafa Prize ceremony, and sought collaborations wherever feasible in the light of the ongoing programmes and activities of COMSATS.

Meetings at Iranian Research Organization for Science and Technology (IROST)

On 26th December 2015, Dr. Qureshi held a meeting with the newly appointed President of IROST, Prof. Fathollah Moztarzadeh, at the latter's office in Iran. Also present during the meeting were Prof. Abdolreza Samimi, Vice President for Technology Development IROST, and Dr. M. Molanejad, Acting President for International Cooperation IROST.

Among the issues discussed during the meeting were the harmonized Statutes of COMSATS, COMSATS' Strategy (2012-2016), COMSATS' International Thematic Research Groups (ITRG), and the offer of 100 Scholarships for graduate studies at COMSATS Institute of Information Technology (CIIT), Pakistan. The officials also discussed IROST's proposal to establish a 'Centre for Human Research Development in Advanced Science and Technology' and its offer to lead an ITRG on 'Renewable Energy'. The organization's participation in the active ITRGs, in particular the 'Climate Change and Environmental Protection', was noted. IROST is one of the Centres of Excellence of COMSATS that offer scholarships to students from Member States. The offer of funding PhD studies/Post-doc visits by IROST to COMSATS' Member States was also discussed, and efforts to make more Iranian students avail graduate studies at CIIT were also pledged. Support of Iranian



The Executive Director presenting COMSATS' shield to the President IROST

officials was also sought for facilitating the mobilization of funds for Iran's Annual Membership Contribution to COMSATS and donation towards its Endowment Fund. In view of their relevant experiences and expertise, IROST Incubation Centre and Pardis Technology Park, Tehran, were urged to support COMSATS' newly announced initiative, COMSATS' Technology Park.

The intensive and candid discussions on the above-mentioned issues led to a better understanding of IROST's position on different matters. The important developments taking place at IROST Incubation Centre were shared by Dr. Molanejad. He informed that Prof. Nasrin Moazami would lead the COMSATS' ITRG on 'Renewable Energy'. The Executive Director strongly advised that correspondence should be initiated by Prof. Moazami to select her Group Members. Prof. Samimi assured Dr. Qureshi of a thorough follow up on the issues raised by him and the decisions made in the 17th and 18th Coordinating Council Meetings. The Executive Director requested Prof. Samimi to go through the report of Rapporteur-General of the 3rd General Meeting of COMSATS held in Accra, Ghana, in October 2015, and to extend support for implementing relevant decisions. Prof. Moztarzadeh pledged IROST's active participation in future activities of COMSATS.

Visits to Iranian Scientific Institutions

Dr. Qureshi also visited the Pardis Technology Park, AryoGen Biotechnology Company, and Iran Nanotechnology Initiative Council (INIC).

Visit to Morocco (November 23-25, 2015)

On November 25, 2015, a delegation comprising Mr. Abdul Majid Qureshi, Research Scholar, COMSATS, Mr. Attiq-ur-Rahman, Sr. Programme Officer, INIT, and Dr. Mobushir Riaz Khan, Director PMAS-UAAS, visited the ISESCO Headquarters. The visit was made on the invitation of the Director, Directorate of Cabinet of the Director General, ISESCO, Dr. Mohammad Ahmad Hussein Al Zou'bi. The delegates were visiting Morocco as members of the Organizing Committee of the 2nd International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture', held in Rabat, Morocco, on November 23-25, 2015 (details in Section 3). Also present during the meeting were Dr. Aicha Bamoun, Programme Specialist, and Dr. Ismail AbdelHamid, Science Expert, Directorate of Sciences, ISESCO, as well as other members of ISESCO staff.

During the meeting, the delegation exchanged views on the areas of COMSATS' on-going cooperation with ISESCO. It was agreed that ISESCO and COMSATS have developed a useful partnership particularly beneficial to Member States of both the organizations. Dr. Zou'bi asserted that further efforts need to be made for forging a similar partnership in the areas of Science Diplomacy.

The delegation was shown around the facilities available at ISESCO Headquarters, including a highly mechanized and state-of-the-art printing press facility.

Visit to Ghana (October 12-28, 2015)

The Deputy Director (Systems) COMSATS, Mr. Nisar Ahmad, visited Ghana, from October 12-28, 2015, in connection with Training Workshop on Repair and

Maintenance of Scientific Engineering Equipment organized by COMSATS in Accra (details in Section 3). Another major objective of the visit was to review the preparations that were being made by Ministry of Environment, Science, Technology and Innovation (MESTI), Ghana, to host the Meetings of COMSATS' two statutory bodies in the Ghanaian capital (details in Section 1).

During his visit, Mr. Ahmad held meetings with H.E. Dr. Rashid Pelpuo, Minister of State for Private Sector Development & Public – Private Partnerships, Government of Ghana (also the Chairman, Planning Committee for COMSATS' Meetings); H.E. Mr. Mahama Ayariga, Ghanaian Minister for Environment, Science, Technology and Innovation; Dr. Yahuza Mohammed Gomda, Director (Science, Technology and Innovation), MESTI; Ms. Adelaide A. Asante, Acting Deputy Director (STI) MESTI; Mr. Mousah Zakarya, Public Relations Officer, MESTI; Mr. John K. Arthur (Coordinator for the COMSATS' meetings, MESTI); and Mr. Marcos (Protocol Officer), MESTI.



Mr. Nisar Ahmad & H.E. Dr. Rashid Pelpuo

On the suggestion of Mr. Ahmad, MESTI established the Liaison Office to coordinate the activities in connection with organization of the two meetings. Other pre-meeting arrangements overseen by him included:

- Finalization and dispatch of invitation letters to the participants for visa formalities;
- Provision of letters for visa-on-arrival to the concerned country delegates.

During his visit, Mr. Ahmad participated in a meeting of the Planning Committee of COMSATS' 3rd General Meeting chaired by H.E. Dr. Pelpuo. The meeting discussed financial matters of the General Meeting; follow-up on invitations sent to member countries; clearance of consignments sent by COMSATS Secretariat; arrangement of a pre-meeting dinner; protocol arrangements for the delegates; and approval of draft messages from relevant offices in the Presidency and the Ministry. Some administrative and logistical arrangements were also deliberated upon.



Mr. Nisar Ahmad with MESTI officials

Visit to Tunisia (October 5-7, 2015)

On October 6, 2015, a Pakistani delegation comprising of officials from COMSATS and other institutions of the country called on the Ambassador of Pakistan to Tunis, H.E. Zaheer Pervaiz Khan. The delegation that was visiting Tunisia in connection with a regional event on National Innovation Systems and Intellectual Property (details in Section 3), included Mr. Abdul Majid Qureshi, Research Scholar COMSATS. Other

delegates were Engr. Tahir Naeem, Coordinator INIT; Mr. Nouman Maqbool Rao, Sr. Project Manager, Higher Education Commission (HEC); and Mr. Ali Tawab Balouch, Sr. Programme Manager, COMSATS Institute of Information Technology (CIIT), Pakistan.

During the meeting, the Ambassador was accompanied by Mr. Marwan Alex Ayyash, First Secretary, Embassy of Pakistan, Tunis. The delegation apprised the Ambassador regarding the success of the aforementioned event that focused on the Arab Region. The Ambassador was also briefed about COMSATS' programmes and activities at regional and international levels, in line with the needs of the organization's Member States, including Tunisia. The Ambassador took keen interest in the programmes of COMSATS, particularly the offer of Postgraduate Scholarships by Centres of Excellence to students and researchers from Member States, which he deemed most pertinent to the needs of Tunisia in the higher education sector and instrumental towards S&T capacity-building in the country. He assured the delegation of Pakistan Embassy's support in sensitizing the Tunisian government about the mission of COMSATS.

Mr. Qureshi also shared with the honorable Ambassador a set of COMSATS' publications.

Visit to Turkey (September 13-20, 2015)

A two-member delegation of COMSATS, comprising Mr. Tajammul Hussain, Advisor (Programmes) and Mr. Farhan Ansari, Sr. Assistant Director (Programmes) visited Ankara, Turkey, from 13th to 20th September 2015, in order to jointly organize the 5th International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' (14-18 September 2015), as well as to hold meetings with the senior officials of the Turkish Government and the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC) with a view to enhance COMSATS' activities in Turkey.

Meetings at SESRIC

The delegation held a meeting with Prof. Huseyin Hakan Eryetli, Director (Publications & IT), SESRIC, on 15th September 2015. The primary objective of the meeting was to explore the possibility of enhancing collaboration between COMSATS and SESRIC. During the meeting, the Advisor (Programmes) informed Prof. Eryetli regarding the capacity-building programmes of COMSATS, and proposed that SESRIC may join hands with COMSATS to jointly address the capacity-building needs of the common Member States. He also shed light on the International Thematic Research Group (ITRG) Programme of COMSATS, as well as the opportunities of scholarships and short-term trainings provided by COMSATS' Centres of Excellence. In this regard, he encouraged SESRIC to identify suitable Turkish researchers/scientists for benefiting from these opportunities. It was informed that COMSATS is maintaining the Islamic-World Science Net (IWSN) web-portal for ISESCO, which features key statistics related to the universities, R&D organizations and Academies of Science in OIC Member Countries. It was noted that SESRIC is also maintaining a vast database of scientific and economic indicators of these countries. He proposed signing of an MoU between COMSATS and SESRIC for joint research studies, scholarships, capacity-building, and sharing of data/statistics.

Prof. Eryetli informed that the main mandate of SESRIC is to compile statistics of OIC Member States; however, the Centre is also actively engaged in capacity-building activities and research studies. He shed light on some of the studies and activities conducted by SESRIC in the past, as well as some planned activities. He welcomed the proposal of having an MoU between COMSATS and SESRIC and agreed that the two organizations will share data and statistics in order to ensure the authenticity and comprehensiveness of the databases maintained by them.

On 18th September 2015, the COMSATS' delegation held a meeting with Ambassador Musa Kulaklikaya, Director General SESRIC, and Prof. Huseyin Hakan Eryetli, Director (Publications & IT), SESRIC. The Director General SESRIC considered the proposed MoU between the two organizations very useful for enhancing collaboration in jointly addressing the scientific needs of their common Member States. During the meeting, it was agreed that SESRIC will share data/statistics of OIC Member States with COMSATS for updating the IWSN web-portal. Moreover, COMSATS and SESRIC will exchange publications and publicity material.

Meeting at the Embassy of Pakistan in Turkey

On 16th September 2015, COMSATS' delegation held a meeting with H.E. Mr. Sohail Mahmood, Ambassador of Pakistan to Turkey. Also present during the meeting were Mr. Muhammad Atiq-ur-Rehman, Senior Programme Officer, Inter Islamic Network on Information Technology (INIT), and Dr. Haider Abbas, Expert of Internet Security. The Advisor (Programmes) informed the honourable Ambassador regarding the programmes and activities of COMSATS in Member States. In this regard, he mentioned the International Workshop on Internet Security, which was being jointly organized at the time by COMSATS, ISESCO, INIT and SESRIC in Ankara. He also informed the honourable Ambassador regarding the matter of ratification of the Accession Agreement by the Government of Turkey to join COMSATS as a Member State. The honourable Ambassador pledged to follow-up the matter with the Government of Turkey, through correspondence with TUBITAK, Turkish Foreign Office and Turkish Parliament. He considered the proposed MoU between SESRIC and COMSATS a welcome step towards technical exchange and collaboration between the research organizations of common Member States. He also advised COMSATS to enhance collaboration with the institutions under TUBITAK, as well as Turkish universities, including the Middle East Technical University (METU), Turkey.

Meetings at TUBITAK

COMSATS' delegation held a meeting with Mr. Mustafa Dayioglu, Director, TUBITAK Cyber Security Institute (CSI) on 17th September 2015. The meeting was also attended by Prof. Huseyin Hakan Eryetli, Director (Publications & IT), SESRIC; Mr. Muhammad Atiq-ur-Rehman, INIT; and Dr. Haider Abbas, Expert of Internet Security. During the meeting, presentations were made by the representatives of TUBITAK CSI, COMSATS and INIT, on the past and ongoing activities of their respective organizations. The Advisor



Advisor (Programmes) COMSATS in a meeting at TUBITAK

(Programmes) shared the details regarding CIIT's offer of 100 postgraduate scholarships to students from COMSATS' Member States. He requested TUBITAK to consider the possibility of allocating at least three postgraduate scholarships for COMSATS' Member States. Mr. Dayioglu informed that Turkey is preparing its Cyber Security Laws, as well as an associated law for data protection/privacy, while the minimum security requirements will be issued by Turkish Government in 2016. He offered to share TUBITAK CSI's expertise and prototypes through joint workshops to be conducted by COMSATS, SESRIC and TUBITAK CSI. In this regard, it was agreed that Dr. Abbas Haider will prepare a concept paper for collaboration between COMSATS and TUBITAK CSI in the area of legislative infrastructure requirements for Cyber Security. Moreover, the TUBITAK CSI offered to share expertise in malware analysis techniques. It was agreed that a concept paper for Malware Database Analysis/Protection will be prepared by TUBITAK CSI, and would be jointly executed by COMSATS, SESRIC and TUBITAK CSI.

On September 18, 2016, the Advisor (Programmes) also held meetings with Mr. Hakan Karatas, Director for International Cooperation, and Dr. Zeynep Arziman Buyakboduk, Head of Bilateral and Multilateral Relations Department of TUBITAK. During the meetings, the Advisor (Programmes) shed light on the programmes and activities of COMSATS, and sought TUBITAK's support regarding the ratification of Accession Agreement by the Turkish Government to join COMSATS as a Member State. It was agreed that TUBITAK will share the details of scholarships with COMSATS, and will consider the possibility of allocating at least three scholarships for COMSATS' Member States. It was also agreed that the profiles of S&T organizations under TUBITAK will be shared with COMSATS with a view to facilitate collaboration.

Visit to Oman (August 23-27, 2015)

The Deputy Director (Systems), Mr. Nisar Ahmad, visited Oman in connection with organization of COMSATS' 8th National Workshop on 'Repair and Maintenance of Scientific, Engineering Equipment in Universities, and Research Institutions' that was held at Rustaq, Sultanate of Oman, from August 23-27, 2015 (details in Section-3).

On the sideline of the workshop, Mr. Ahmad held discussions with some of the senior officials of Omani Ministry of Higher Education (MoHE) and representatives of other participating organizations. These included: Dr. Abdullah Mohammed AL Sarmi, Undersecretary, Ministry of Higher Education, Oman; and Dr. Hammod Amur Hamood Al Wardi, Dean College Applied Science, Rustaq, Oman. During these meetings, Mr. Ahmad briefed them about the COMSATS' international programmes and activities, particularly about the ongoing workshop.



Mr. Ahmad during a meeting with Undersecretary and other officials of MoHE

Mr. Ahmad also held meetings with Mrs. Wafaa El Alami, Head of Planning, Information and Documentation Centre, ISESCO, who was representing ISESCO in the workshop.

Visit to Morocco (July 13-15, 2015)

The Executive Director COMSATS, Dr. I. E. Qureshi, visited Rabat, Morocco, in July 2015, in connection with the country's accession to COMSATS (details in Section 2) and to finalize the cooperation agreement with ISESCO Headquarters in Rabat.

Meeting with Director General ISESCO

Dr. Qureshi was accompanied by Advisor (Programmes), COMSATS, Mr. Tajammul Hussain, on his visit to ISESCO Headquarters in Rabat, Morocco, on 15th July 2015, to finalize a cooperation agreement between the two organizations for the biennium 2016-17. The delegation was received by the Director-General ISESCO, H. E. Dr. Abdulaziz Othman Altwaijri, at his office in Rabat. Also present on the occasion were: Dr. Amina Obaid Ramadhan Alhajri, Deputy Director-General ISESCO, and Dr. Mustapha Ahmed Ali, Supervisor Directorate of External Relations and Cooperation (ISESCO).



Executive Director and Advisor (Programmes) COMSATS in a meeting with Director General ISESCO

Dr. Qureshi briefed the Director-General about the meetings of COMSATS' delegation held earlier during the day with the Acting Director (Science) ISESCO, Ms. Aicha Bamoune, and former Director ISESCO Center for Promotion of Scientific Research (ICPSR), Ms. Wafaa El-Alami, in connection with the joint activities of COMSATS and ISESCO during the year 2015. He also informed the Director-General about a consultative meeting held between the delegation and the Honourable Deputy Director-General, in which all aspects of future cooperation had been discussed at length. The Director-General expressed his satisfaction towards the ongoing joint programmes, and complete confidence in COMSATS with respect to the execution of joint activities during the next two years. He intimated that the proposals from COMSATS were discussed with him personally and he finds no hesitation in approving them, because of their high intrinsic value and excellent track record of COMSATS as an efficient and reliable partner. Among other things discussed between the two Heads of organizations was the general state of science funding in Member States and the benefits of pooling R&D resources from among developing countries.



E.D. COMSATS and D.G. ISESCO signing the cooperation agreement for 2016-17

The signing of the cooperation agreement took place in presence of senior officials of various

Divisions and Sections of ISESCO. The agreement signed by Dr. Qureshi and Dr. Altwaijri, on behalf of their respective organizations, entails cooperation for 17 different activities to be held during the next two years. These include:

- continuation of the already implemented serial workshops;
- symposia and meetings relate to the nanotechnology, ICTs, and biotechnologies; and
- support to ITRGs on Mathematical Modeling, as well as Agriculture and Biotechnology.

Commenting on Morocco's accession to COMSATS, the Director-General congratulated COMSATS and expressed hope that, as the host country of ISESCO, Morocco would now be fully benefitting from future events organized jointly by COMSATS and ISESCO.

Visit to Italy (June 8-12, 2015)

In connection with COMSATS' Science Diplomacy Programme, Mr. Abdul Majid Qureshi, Research Scholar COMSATS, visited Italy to attend the 2015 AAAS-TWAS Summer Course on Science & Diplomacy, held in Trieste, Italy, from June 7-12, 2015. The aim was to strengthen COMSATS' capacity to effectively execute its Science Diplomacy programme. This was a part of the ongoing collaboration between COMSATS and TWAS for the said programme.

Around 51 participants and speakers from around the world had gathered to discuss and exchange ideas relevant to the relatively new and emerging theme of 'Science & Diplomacy'. The workshop also comprised of group projects in which multi-national groups of individuals from diverse national, and scientific backgrounds were required to reach consensus over a problem statement of transnational nature by applying the skills gained during the technical sessions of the Workshop. Mr. Qureshi represented Pakistan in a group comprising of participants from Bangladesh, Colombia, Korea (DPR), and Ghana. The project concerning establishment of an inter-regional vaccine research centre that Mr. Qureshi presented on the close of the workshop had been supervised by the CEO/President of CRDF, USA, Dr. Cathy Campbell and Foreign Secretary of the Cuban Academy of Science, Dr. Sergio Jorge Pastrana.



COMSATS' Research Scholar giving a presentation at a Workshop in Trieste

Visit to Egypt (June 8-9, 2015)

Senior Assistant Director (Programmes) COMSATS, Ms. Huma Balouch, undertook a visit to Cairo, Egypt, from 7th-10th June 2015. The visit was undertaken with an objective to participate in the International Conference on 'Agriculture, Food Security, and Biotechnology', held at National Research Centre (NRC), Cairo, Egypt, from 8th-9th June 2015 (Section 3). Ms. Balouch contributed to the Conference as co-organizer from COMSATS Secretariat as well as a speaker in one of the technical sessions. Ms.

Balouch presented her research titled “Study of Phenotypic Polymorphism and Detection of Genotypic Polymorphism in *Menochilus sexmaculatus* (Coleoptera: Insecta) using RAPD PCR”. Her talk focused on how RAPD PCR analysis can be used in species and strain identification. She highlighted the importance of the molecular techniques in analysis of genetic variation of insect population and identification of cryptic insect species and biotypes, and underscored the need for integrating RAPD-PCR into classical identification methods of insects.

On the sideline of the Conference, Ms. Balouch also coordinated the foundation meeting of COMSATS ITRG on ‘Agriculture, Food Security, and Biotechnology’, held on 10th June 2015, at NRC, Egypt (Section 4). She also interacted with a number of senior woman scientists and researchers working in different laboratories of NRC.



Ms. Balouch among the participants of the Egypt event

Visit to Sri Lanka (May 12-16, 2015)

Mr. Tajammul Hussain, Advisor (Programmes) and Mr. Farhan Ansari, Sr. Assistant Director (Programmes) visited Colombo, Sri Lanka, from 11th to 17th May 2015, in order to jointly organize and participate in the following activities, hosted by the Industrial Technology Institute (ITI), Sri Lanka:

- i. The 18th Meeting of COMSATS Coordinating Council (12-13 May 2015) (details in Section 1);
- ii. International Symposium on ‘Impacts of Extreme Atmospheric Events on Geo-Surface in a Changing Climate’ (14-15 May 2015) (details in Section 3);
- iii. The 4th Meeting of COMSATS’ ITRG on ‘Climate Change and Environmental Protection’ (16 May 2015) (details in Section 4)



The Executive Director COMSATS joined the above-mentioned officials as the leader of COMSATS’ delegation (from 11th to 15th May 2015), and participated in the 18th Coordinating Council Meeting. During the visit, COMSATS’ officials held discussions with the local organizing committee in order to ensure suitable arrangements for the afore-mentioned events.

Visit to Kazakhstan (April 23-25, 2015)

A two-member delegation comprising of Dr. I. E. Qureshi, Executive Director COMSATS, and Prof. Katijah Mohamad Yusoff, Dean, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia (UPM), Malaysia, visited Kazakhstan, on 24th and 25th April 2015. The visit was made by the two officials in capacity as the members of COMSATS' International Technical Advisory Committee (TAC) for technical evaluation of Al-Farabi Kazakh National University (KazNU) as prospective Centre of Excellence of COMSATS. Nomination of KazNU in this regard had been received from the Ministry of Education and Science, Government of Republic of Kazakhstan. The First Vice-Rector of KazNU, Prof. Mukhambetkali Burkitbayev, had invited the visiting delegation.

Meetings and Interactions with KazNU Officials

In connection with the Network membership, KazNU had earlier submitted a pre-requisite filled-in pro-forma containing full information about the academic programmes of different faculties of the University. The University was deemed suitable to become a Network member owing to its highly prestigious status within Kazakhstan's national educational system, the strength of its teaching and research programmes and its international orientation.

On 24th April 2015, the delegation made the first tour of various faculties of the University for technical evaluation. The First Vice-Rector Prof. Burkitbayev showed the delegation around the central administrative block of the University that also housed a museum with preserved items of great historical importance. The items included the works of the great 10th century scholar, Abu Nasr Al-Farabi, after whom the University is named.

It was informed by the Prof. Burkitbayev that the university had been undergoing a rigorous process of modernization that was started in 2012. Some departments were merged to effectively govern the operations of the University, thus reducing the total number of departments from over 100 to about 60. Other important features of the modernization were: the delegation of certain administrative powers from Rector to Vice Rectors and Deans of Faculties; and initiation of concerted efforts for enhancing academia-industry relations. It was learnt that greater emphasis is being laid on commercializing the intellectual property holdings of the faculty members through a University Technology Park and faculty-based incubation centres. The incubation



COMSATS' delegation holding a meeting with Rector KazNU and other senior officials of the University



centres also provide young graduates office facilities and initial financial support to encourage them to launch start-up companies. It was informed that the focus on internationalization, through students and faculty exchanges on bilateral basis, as well as involvement with international educational cooperation platforms, comprises another important component of the modernization efforts. In this regard, the research infrastructure is being enhanced to make it consistent with the requirements of international collaboration. The Executive Director informed that COMSATS' Network membership could facilitate the achievement of the University's objective of modernization with respect to internationalization.

A formal meeting was also held with the honorable Rector KazNU, Prof. Galimkair Mutanov, and deans of its fourteen faculties related to Science and Technology. Prof. Mutanov gave his opening remarks in which he considered it an honor for KazNU to be considered for COMSATS' Network Membership. He pointed out KazNU's ongoing strong research collaboration with International Center for Chemical and Biological Sciences (ICCBS), Pakistan. Speaking on the occasion, the Executive Director highlighted the significance of COMSATS' Centres of Excellence in achieving its objectives of South-South cooperation. He introduced the Network as having specialized R&D institutions in developing countries of multidisciplinary/mono-disciplinary nature, out of which two are universities. Dr. Qureshi noted that one of the universities, COMSATS Institute of Information Technology (CIIT), Pakistan, is not only a Centre of Excellence of COMSATS but also its flagship project in the country. It was noted that avenues of academic and research cooperation between CIIT and KazNU could be explored in common areas of interest.

In her remarks, Prof. Khatijah M. Yusoff also introduced her university, the Universiti Putra Malaysia (UPM), and her personal research interests related to molecular biology. She invited KazNU deans to consider research collaboration with her group, which is involved in research on viruses.

The Executive Director COMSATS made a presentation on 25th April to senior faculty members and Directors of S&T-related research institutes of the University, covering the history, organizational structure and key initiatives of COMSATS. The role of COMSATS Coordinating Council meetings and International Thematic Research Groups for South-South cooperation was especially highlighted.

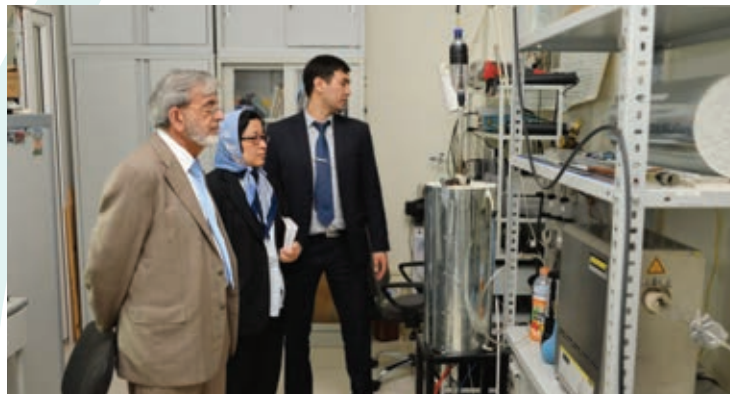


Technical Evaluation

A tour of major laboratories in the Faculty of Physics and Technology, Faculty of Biology and Biotechnology, and Faculty of Chemistry and Chemical Technology, along with its two independent Institutes, was given to the visiting TAC members.

The evaluation process, spanning two sessions on 24th and 25th April, comprised of inspection of experimental facilities and general working conditions of the staff; questioning about scientific projects being undertaken; and the prospects of future work that could become a basis of international collaboration. The interactions with scientific workers during the visits revealed the following strengths of the University:

- well-equipped laboratories have advanced instruments for research and teaching;
- engagement of senior researchers and graduate students in research projects of worldwide contemporary interests, such as natural products based pharmaceuticals, chemical processes for coal liquefaction and gasification, and uses of new materials in renewable energy sector;
- scientific staff and researchers' full utilization of the available analytical instruments in Chemistry, Biology and Physics laboratories, that are maintained in prime working condition;
- eco-friendly and well-organized maintenance of the laboratories and work places providing pleasant and conducive work environment.



COMSATS' TAC members visiting technical facilities of KazNU

Visit to Jamaica (March 21-24, 2015)

From March 21-24, 2015, the Executive Director COMSATS, Dr. I.E. Qureshi, visited Jamaica, which is the home to COMSATS' Centre of Excellence, the International Centre for Environmental and Nuclear Sciences (ICENS), Kingston. He held meetings at the Ministry of Science, Technology, Energy and Mining (MSTEM), and the National Commission on Science and Technology, in company of the Director-General ICENS, Mr. Charles N. Grant.

Meeting at the Ministry of Science, Technology, Energy and Mining

Dr. Qureshi met the Minister of State, Ministry of Science, Technology, Energy and Mining (MSTEM), Government of Jamaica, Honourable Julian J. Robinson, MP, who was joined by the Permanent Secretary of the Ministry, Ms. Hillary Alexander, JP.

Welcoming the Executive Director, the Honourable Minister expressed his appreciation of the COMSATS' activities aimed at fostering scientific cooperation among developing countries. He showed keen interest in the opportunities of scientific capacity-building available from the platform of COMSATS, especially the

offer of scholarships for undertaking graduate studies at COMSATS Institute of Information Technology (CIIT), Pakistan. Being himself an alumnus of the University of Illinois, Urbana-Champaign (UIUC), he was pleased to note that CIIT has academic collaborations with that university.

Elaborating the role played by the Network of International S&T Centres of Excellence (COEs) towards COMSATS' international programmes, Dr. Qureshi pointed out that the Heads of the Centres of Excellence meet regularly on annual basis, discuss their research activities and explore collaboration possibilities, which results in an effective mechanism of South-South cooperation. In this regard, he noted the inability of ICENS to tap the opportunities of entering into bilateral or multilateral scientific exchanges with other Centres. The Honourable Minister was informed that one of the other mechanisms of integrating with COMSATS' programmes is through participation in its International Thematic Research Groups (ITRGs). The Permanent Secretary informed that S&T-related work of Jamaica is spread across different Ministries and universities. The Permanent Secretary desired the National Commission on Science and Technology (NCST) of Jamaica to be taken on board with respect to the planned joint activities of COMSATS and ICENS. The Executive Director assured her that COMSATS would use the services of Director-General ICENS to identify and recommend scientific workers of different laboratories, including those of ICENS, for their participation in COMSATS' initiatives and activities, such as workshops, exchange visits, trainings, thematic research, and invited lectures.

The Honourable Minister instructed Director-General ICENS to fully utilize COMSATS' platform for interactions of ICENS with regional and international counterparts. The Director-General expressed his commitment to do so by, inter alia,

sending selected students for admission in CIIT; engaging with COMSATS for seeking help in organizing IAEA-supported upcoming symposium on the use of mini neutron source reactors; and evaluating other offers of support by COMSATS. The Minister was gently reminded by the Executive Director of the need to continue Jamaica's annual membership payments to COMSATS, assuring him that the financial contribution made by the Government of Jamaica will be exclusively utilized to benefit Jamaican scientific community.



E.D. COMSATS with Jordanian Minister for Science, Technology, Energy & Mining



Dr. Qureshi getting briefing on ICENS facilities during his visit

Meeting at National Commission on Science and Technology

On 25th March, 2015, Dr. Qureshi met the Director-General of the Jordanian National Commission on Science and Technology (NCST), Hon. Professor Errol Morrison, OJ. The NCST of Jamaica plays the role of a national authority responsible for devising policies and overseeing the development of S&T sector in the country. Prof. Morrison engaged Dr. Qureshi in broader discussion on the failure of developing countries to set aside adequate financial resources for R&D in order to achieve scientific capacity in crucial areas of economic importance. Dr. Qureshi informed him about COMSATS' initiatives in the fields of ST&I policy, science journalism, and science diplomacy. He agreed that the need for science advocacy should never be underestimated and lauded COMSATS' efforts in this respect. Prof. Morrison encouraged the Director-General ICENS to venture ICENS into new interdisciplinary areas with COMSATS' support. The Director-General ICENS assured him that he would be willing to play the role of a coordinator in fully exploiting all areas of S&T supported by COMSATS.

Visit to France (March 17-21, 2015)

On invitation from Dr. Flavia Schlegel, Assistant Director-General for Natural Science, UNESCO, the Executive Director COMSATS, Dr. I. E. Qureshi, visited UNESCO Headquarters in Paris on 17th – 19th March 2015. The invitation was extended in connection with the signing of the Memorandum of Understanding (MoU) between COMSATS and UNESCO at Director-General's office, UNESCO Headquarters,

MoU Signing Ceremony at UNESCO Headquarters

The MoU was signed on 18th March 2015, by Dr. I. E. Qureshi, Executive Director COMSATS, and Mrs. Irina Bokova, Director-General UNESCO. The ceremony was witnessed by H.E. Mr. Ghalib Iqbal, Pakistan's Permanent Delegate to UNESCO and Ambassador to France; Dr. Maciej Nalecz, Director & Executive Secretary of the UNESCO International Basic Sciences Programme; Dr. Yoslan Nur, Programme Specialist, Division of Science Policy and Capacity-Building, UNESCO, and Dr. Majid Khan, Director (International Affairs) COMSATS.



E.D. COMSATS in meeting with D.G. UNESCO, Paris

First Meeting of COMSATS-UNESCO Working Group

The signing ceremony was followed by the first meeting of the Working Group of COMSATS and UNESCO. The Executive Director COMSATS, and the Director International Basic Sciences Programmes (IBSP), Division of Science Policy, UNESCO, Dr. Maciej Jan Nalecz, leading their respective delegations met at the latter's office in UNESCO Headquarters, Paris, to undertake preliminary discussions of joint future activities. Dr. Yoslan Nur, Programme Specialist IBSP, Dr. Ahmed Fahmi, Programme Specialist IBSP, and Dr. Jean-Paul Ngome Abiaga, Assistant Programme Specialist IBSP, UNESCO, were also present during the meeting.

The officials of UNESCO expressed their appreciation for COMSATS' international programmes and designated Dr. Yoslan Nur to present the scope and possibilities of work under the present MoU and undertake consultations with the members of COMSATS Coordinating Council on the sidelines of the 18th Coordinating Council Meeting, which was later held in Colombo, Sri Lanka, in May 2015. The Working Group was also informed about COMSATS' Science Diplomacy programme launched on 25th February 2015, in Islamabad, Pakistan.



COMSATS-UNESCO Working Group meeting in progress

Meetings with other UNESCO Officials

The Executive Director COMSATS also held meetings with senior UNESCO officials, in which he discussed the ongoing and future activities to be undertaken by COMSATS Institute of Information Technology (CIIT) in cooperation with UNESCO. A meeting was held on March 18, 2015, with Dr. Siegfried Demuth, Chief Hydrological Systems and Climate Change, Division of Water Sciences, Natural Sciences Sector, UNESCO. The Executive Director discussed the way forward on the establishment of Category-II Regional Water Research Centre (RWRC) at CIIT Abbottabad Campus, which had already been endorsed by the Inter-governmental Council of UNESCO's International Hydrological Programme (IHP). During the discussion, Dr. Demuth shared that UNESCO has approved the process leading up to feasibility study of Category-II Centre, and suggested that CIIT should complete the necessary paper work, which includes an agreement and preparing a feasibility report for onward submission to UNESCO. Moreover, Dr. Demuth shared that the feasibility study of the Category-II Centre will be carried out with the support of UNESCO's designated experts based in South Asia Office. A dossier, in this regard, may be submitted to the session of the Executive Board before the 38th session of the General Conference of UNESCO.



E.D. COMSATS with D.G. IBSP and other officials of UNESCO

In a meeting held on March 19, 2015, the Executive Director COMSATS briefed Mr. Kishore Rao, Director, UNESCO's World Heritage Centre, about CIIT's Faculty of Architecture and Design; the significance of the proximity of CIIT's campuses to the national heritage sites of Pakistan; and the Institute's valuable contributions for conserving the cultural heritage of Pakistan. The Executive Director discussed a proposal to establish Grand-Trunk Museum at CIIT's Wah campus as a collaborative project between CIIT and UNESCO. Mr. Rao appreciated COMSATS and CIIT's educational activities and initiatives on heritage conservation, and assured of UNESCO's full cooperation for CIIT's ongoing and planned activities.



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AN OVERVIEW OF MAJOR ACTIVITIES AND ACHIEVEMENTS OF COMSATS' CENTRES OF EXCELLENCE

A. REPORTS RECEIVED

• Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh	122
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A group of twenty R&D institutions from different developing countries, predominantly 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. This section covers reports received from COMSATS' Centres of Excellence, as well as news of some Centres covered in COMSATS Newsletter over the reporting period.

AN OVERVIEW OF MAJOR ACTIVITIES AND ACHIEVEMENTS OF COMSATS' CENTRES OF EXCELLENCE

COMSATS' Centres of Excellence is a vibrant set of R&D and academic organizations inter-connected for technical cooperation at the platform of COMSATS as its Network. These are engaged in a wide spectrum of scientific activities, according to their national priorities and international commitments. The following short reports provide only a glimpse of their strength, capabilities and achievements, as well as their ongoing programmes and activities. Section 'A' is based on the activity-reports received for COMSATS Annual Report on request, while Section 'B', is mostly a compilation of news entries covered in COMSATS Newsletter during 2015. BCSIR, Bangladesh; EMBRAPA Agrobiologia, Brazil; ICCES, China; ICENS, Jamaica; RSS, Jordan; NMC, Nigeria; CIIT, Pakistan; ITI, Sri Lanka; and IRCC, Sudan, have been covered in Section 'A', while some highlights from IROST, Iran; Al Farabi KazNU, Kazakhstan; ICCBS, Pakistan; TIRDO, Tanzania; and TUBITAK MAM, Turkey, have been given in the Section 'B'.

A. REPORTS RECEIVED

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

Bangladesh Council of Scientific and Industrial Research (BCSIR) is a non-profit multidisciplinary public research organization of Bangladesh. The Council has been affiliated with COMSATS as its Centre of Excellence since 2011. The main task of BCSIR is to foster scientific cooperation and enhance the culture of R&D in the country. In 2015, BCSIR accomplished a significant number of assignments, which related to laboratory development; strengthening of human resources by induction of new scientists; and disbursement of fellowships, research grants to universities and for its own research undertakings.



Research and Development

During 2015, BCSIR carried out research in different areas based on national needs. Research projects were carried out under different categories, i.e., Research & Development of BCSIR; Annual Development Programme of the Government of Bangladesh (GoB); Special Allocation Project from the Ministry of Science and Technology, GoB; Climate Change Trust Fund from the Ministry of Environment and Forest, GoB; as well as foreign-funded projects.

Sr.	Name of Project	Number
1	R&D Projects	152
2	Annual Development Programmes	6
3	Special Allocation Projects	6
4	Technical Assistance Project	1
5	Climate Change Project	1

International Collaboration

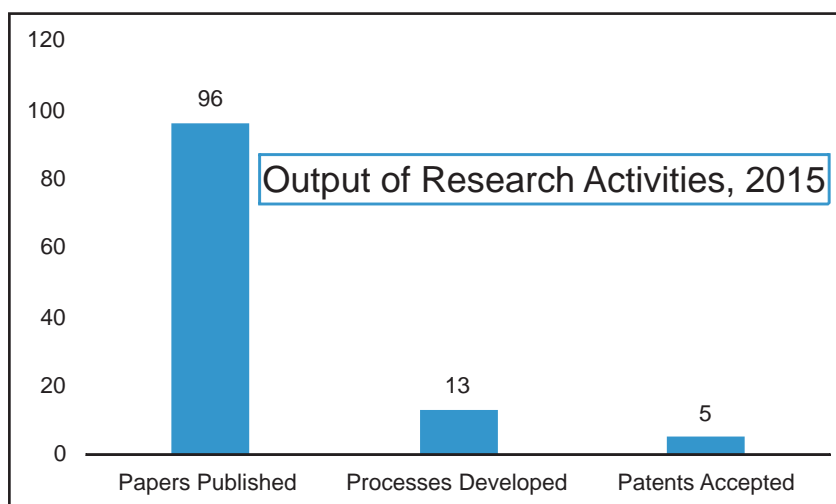
With an objective to strengthen its scientific linkages, BCSIR signed an agreement with the Council of Scientific and Industrial Research (CSIR), India, and China National Pulp and Paper Research Institute, China, for scientific and technical cooperation for the period 2015-2019.

Capacity-Building Events

BCSIR organized 14 seminars during 2015 in connection with its ongoing R&D projects. The Centre also provided trainings to 250 professionals on different scientific equipment.

Academic Activity

Scientists at BCSIR supervised 150 theses of M.Sc students from various universities during 2015.



Awards and Honours

- Dr. Md. Sarwar Jahan, Principal Scientific Officer, BCSIR Laboratories, Dhaka, received the 3rd Prize in the 'ISTIC-TWAS Competition for Successful Innovation in Science and Technology in Developing Countries', on 11th October 2015. The award was in recognition of Dr. Jahan and his colleagues' research work on creating an environment-friendly method for using agricultural waste.
- Dr. Jahan was also selected as the Fellow of International Academy of Wood Science (IAWS).
- Ms. Shirin A. Jahan, Senior Scientific Officer, Institute of Glass and Ceramic Research and Testing (IGCRT), BCSIR, received the 'HOPE Award' for best poster presentation, entitled 'Hydroxyapatite from Waste Materials for Treatment of Heavy Metals in Aqueous Medium'. The Award was given during the '7th HOPE Meeting with Nobel Laureates 2015,' held in Tokyo, Japan (1-5 March 2015).

EMBRAPA Agrobiologia, Brazil

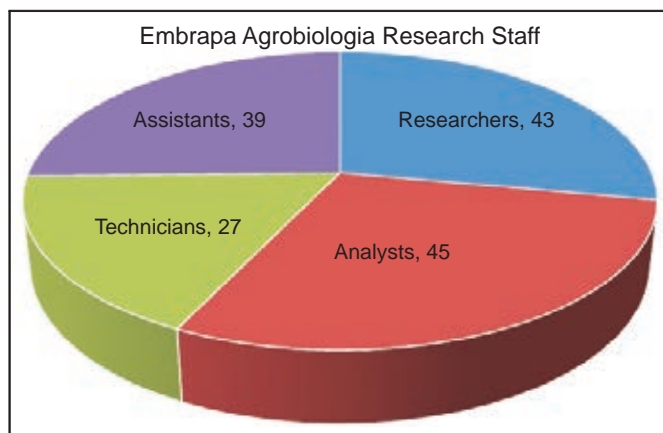
Characterized as a thematic research centre, the EMBRAPA Agrobiologia began operations in 1950s led by Dr. Johanna Döbereiner. At that time, all the research was focused on the Biological Nitrogen Fixation (BNF). After the creation of EMBRAPA (Research Corporation of Ministry of Agriculture of Brazil) in 1973, the Centre received the title of National Research Centre of Agrobiology (EMBRAPA Agrobiologia) and became a part of a network of 47 research units. Today, the Centre is recognized nationally and internationally for its excellence and scientific contributions in the areas of BNF, organic agriculture, greenhouse gas emissions (GHG), land reclamation and biotechnology.



The EMBRAPA Agrobiologia has a total area of 862 hectares and an infrastructure that includes a central building, as well as a research pavilion, 6 greenhouses, 19 laboratories, a library and a restaurant, in addition to areas for experimental fields.

Research and Development

The basic and applied research at EMBRAPA Agrobiologia conducted on biological inputs to agricultural systems included developing the descriptions of new bacteria





species, selection of efficient strains to Biological Nitrogen Fixation, and formulation of new inoculants for sugarcane, common beans, cowpea, peanut, maize, wheat, elephant grass and forage grasses.

A significant part of EMBRAPA Agrobiologia's research activities focused on the development of technological solutions for eco-friendly sustainable agriculture. An ongoing project intends to create an organic nitrogen fertilizer exclusively based on green manure. The advances on biological control of insect pest include the selection and cultivation of attractive plants as sunflower and sorghum, among the vegetables that can provide a suitable habitat to predator pests.

Dr. Renato Rodrigues, soil researcher at EMBRAPA Agrobiologia and one of the representatives of Brazil on the Intergovernmental Panel on Climate Change (IPCC), has shown that Brazil has considerably reduced GHG emissions between 2005 and 2010, which is in keeping with the environmental and food security concerns of the relevant UN agencies. His research shows that if well-managed; soils have a high capacity to absorb carbon and may even consume methane and nitrous oxide from the atmosphere, helping to reduce the greenhouse effect. Low Carbon Agriculture Plan (ABC) and measures like zero illegal deforestation will further help reduce GHG emissions.

Other agriculture research findings made at the Centre suggest that a particular functional group of bacteria, known as plant growth promoting bacteria has a positive effect on the initial growth of sugarcane from pre sprouted seedlings, mainly by an efficient use of nitrogen fertilizer.

The Centre is leading 40 projects financed by EMBRAPA and other development agencies of Brazil. Furthermore, it is conducting another 36 research projects in partnership with relevant institutions.

Academic Activities

- In 2015, EMBRAPA Agrobiologia supervised 27 undergraduate, 16 masters, 27 doctoral and 5 post-doctoral students.
- EMBRAPA Agrobiologia researchers published 36 articles in indexed journals.
- The Centre has hosted students from European and African countries, and, most frequently from all other Latin American countries.



Capacity-Building Activities

The knowledge generated, and the technologies and processes developed by the researchers of EMBRAPA Agrobiologia are disseminated by the relevant departments for technology transfer. In 2015, a great part of capacity-building activities related to organic agriculture. A list of these events is as follows:

Capacity-Building Activities		
Event	Number of events	Number of beneficiaries
Field day on Organic Cultivation of Vegetable Production	16	414
Course on Natural Agents to Control Pests and Diseases	4	111
Course on Economic and Ecological Analysis of Agroecosystems	4	133
Course on Recovery of Degraded Areas, Seedling Production, Agroforestry and Environmental Suitability of Rural Properties	5	254
Course on Unconventional Alimentary Plants	3	191
Course on Mature Fertilization and Management of Biomass	3	58
Course on Bean Production	1	66
Course on Water and Soil Conservation	2	77
Course on Introduction to Agroecology and Organic Production	2	72
Course on Composting and Waste Fermentation	2	85
International Training Course on Quantification of BNF and Efficiency of Nitrogen Fertilization	1	16
Workshop on Agroecology	5	96
Workshop on Innovation, Science and Technology	1	90
Technical Visit to the Integrated Agroecological Production Sites	10	193
Seminar on 'For a Brazil Agroecology'	1	100
National Seminar on Urban Agriculture	1	300
Seminar on Agroecology State	1	99
Thematic Day in Rio de Janeiro	11	331
Total	73	2,686

International Collaborations

- EMBRAPA Agrobiologia signed an agreement with National Academy of Sciences (NAS), USA, for funding the research project, titled 'Monitoring the Disturbance of the Microbiota in Amazonian Soils during Conversion of Forest to Pasture and its Consequences on Cattle Health'.
- A technical mission from Senegal visited EMBRAPA Agrobiologia for technical and scientific exchange, with the aim of training technicians and Senegalese farmers for development of a more sustainable agriculture and ecological base in the region.



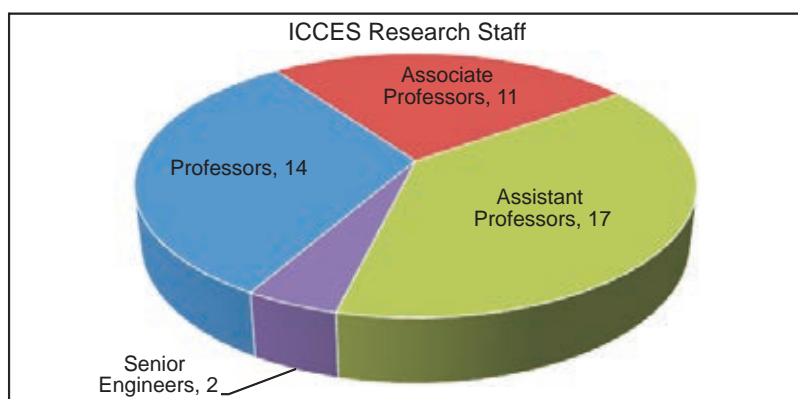
International Center for Climate and Environment Sciences (ICCES), China

The International Center for Climate and Environment Sciences (ICCES), China, was established in 1991 in order to meet the urgent needs for studying climate and environment related problems. The Center 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 by the Ministry of Science and Technology (MoST), Government of China. ICCES has been a Centre of Excellence of COMSATS since 1994.



Key Statistics of ICCES

The Center awarded 3 Ph.D and 1 Master degree in 2015. A total of 40 postgraduate students are currently studying at ICCES, including 8 joint training postgraduates, and 3 international Ph.D scholars supported by CAS-TWAS President's Ph.D Fellowship Programme.



Research Projects

During the year, there were 57 ongoing research projects undertaken by ICCES. A summary of projects by different funding agencies is given as follows:

ICCES Ongoing Research Projects	
Funding Agency	No. of Projects
MoST, China and Ministry of Finance (MoF), Govt. of China	16
National Natural Science Funds of China (NSFC)	28
Chinese Academy of Sciences (CAS)	7
MoST, China and Thailand Research Fund (TRF)	2
National Marine Environmental Forecasting Center	4

Research Activities

ICCES continued to make tremendous progress in academic and research activities, especially in the areas of development and application of Dynamic Earth System Model; meteorological and environmental forecast and related disaster assessment theory and technique; data assimilation theory and methodology; and earth system theory and natural cybernetics.

ICCES has successfully released the first version of Chinese Academy of Sciences' Earth System Model (CAS-ESM 1.0) in Beijing, in September 2015. The Center has also made great progress on various sub-system models of ESM, i.e., atmosphere model, ocean model, land surface hydrological model, vegetation dynamics model and the corresponding coupling mode.

In 2015, ICCES has further improved its short-term climate prediction system. Besides organizing consultancies on behalf of IAP, ICCES attended national consultancies and made predictions of disastrous weather and climate. IAP short-term climate prediction system has been transferred to Thailand and directly used in the prediction of floods and droughts and improving the capacity of Thailand in climate and environment sciences. ICCES has also made progress on real-time climate prediction and forecast system.

Capacity-Building Activities

Organization of International Conferences

The following international events were organized by ICCES during 2015:

- 14th CAS-TWAS-WMO Forum: International Symposium on 'Coupled Data Assimilation' (July 5-8, 2015);
- CAS-CSIRO Workshop on 'Climate Change and Impact' (June 22-24, 2015);
- International Symposium on 'Impacts of Extreme Atmospheric Events on Geo-Surface in a Changing Climate' (May 14-15, 2015); and
- 4th WCRP CORDEX Science and Training Workshop in East Asia (November 23-16, 2015).

Foreign Students and Visiting Scholars

- Mr. Sherly Selton from Sri Lanka started his Ph.D programme at ICCES.
- Two CAS-TWAS President's Fellowship awardees, Dr. Worachat Wannawong from Hydro and Agro Information Institute (HAIL), Thailand, and Dr. Bushra Khalid from CIIT, Pakistan, started their postdoctoral researches at ICCES. Their research areas are 'Short-term Prediction' and 'Coupled Model Assimilation', respectively.
- In 2015, ICCES invited 13 leading scientists, senior researchers, Ph.D students and post-doc fellows from the United Kingdom, the United States, Thailand, Australia, and Sri Lanka. These scholars shared their recent research progress on topics related to climate and environment sciences.

International Cooperation

- After the success of two-year Thailand-China Cooperative Research Project on the 'Development of Seasonal Climate Forecast System in Thailand Using IAP-DCP Model', ICCES and King Mongkut's University of Technology Thonburi, Bangkok, Thailand, have planned to apply the model in its 2016 international research project supported by the National Natural Science Foundation of China and Thailand Research Fund (TRF).
- The Center signed an MoU with ITI, Sri Lanka, regarding transfer of knowledge and technology, exchange of data, mutual assistance in data analysis, and personnel training cooperation in areas of climate and environment sciences.

Awards and Honours

The following professors associated with the Center received awards and prizes:

- Prof. Xiangjun Tian won the first prize of 'Scientific and Technological Progress Award' from the National Administration of Surveying, Mapping and Geo-information (NASG) of China.
- Prof. Fei Zheng was awarded the second prize of 'Military Scientific and Technological Progress Award', and was also selected as the 'Excellent Member of Youth Innovation Promotion Association', CAS.

Publications

Through successful implementation of the ongoing projects, ICCES scientists published 57 peer-reviewed scientific papers in leading national and international journals and a monograph.

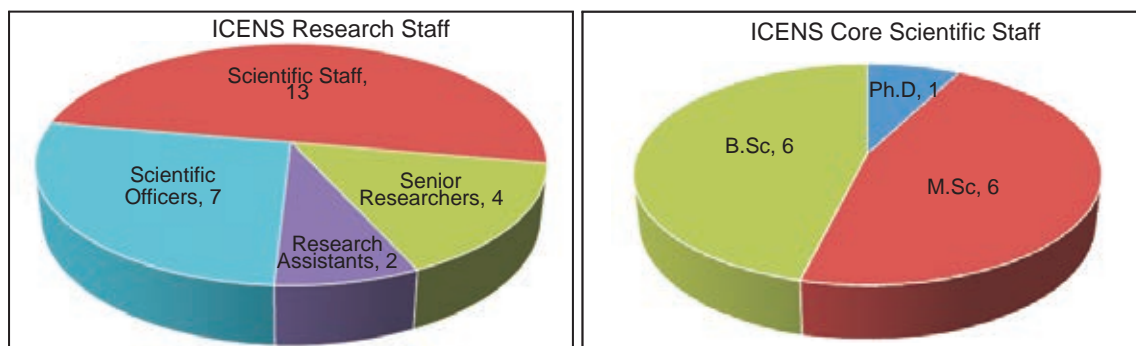
International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica

The International Centre for Environmental and Nuclear Science (ICENS), Jamaica, is a complex of three main laboratories located on the University of the West Indies (UWI) Mona campus. ICENS carries out multidisciplinary research and development to improve the environment, natural resource base and socio-economic advancement of Jamaica. Its core function is investigation of the chain: bedrock > soil > plants and animals > humans.



This function is translated into research programmes for:

- Analyzing the geochemistry of rocks, soils, plants, animals and pollution and their effects on agriculture, food and human health;
- Converting the resulting data into multidimensional information visualization, such as GIS; and
- Transforming the information into knowledge to provide high-level decision-makers with options for effective policy making and actions.



Major Research Activities

ICENS contributed towards the following major ongoing research activities in 2015:

- Conversion of the SLOWPOKE-II Research Reactor from Highly Enriched Uranium to Lowly Enriched Uranium;
- Speciation of trace elements, such as Cadmium, in Jamaican agricultural soil;
- Geochemical analysis for developing a national database on the chemistry of food;
- Building up background information on the chemistry of human tissues using Total Reflection X-ray Fluorescence Analysis (TXRF);
- Trace elements analysis of several sub-species of Marijuana; and
- Data sharing.

Some of the new projects approved by ICENS during 2015 pertained to:

- Strengthening Cradle-to-Grave Control of Radioactive Sources in the Caribbean Region;
- Upgradation of Reactor Infrastructure at the University of West Indies, SLOWPOKE Facility JM-1;
- Carbon biogeochemistry (carbon emissions and sequestration);
- ICENS Air Quality Programme.

Capacity-Building Activities

- Eight staff members of ICENS presented/attended 10 conferences during 2015.
- Eight staff members attended 18 external training activities, workshops and technical meetings.
- Three training sessions were hosted at ICENS, training given to a total of 56 persons.

International Collaborations

ICENS formed collaborations with the following foreign organizations and agencies in the corresponding areas:

- Government of the Cayman Islands, British Overseas Territory (Arsenic study);
- Pan American Health Organization / World Health Organization (Arsenic study);
- US Department of Energy, USA (Core conversion and facility upgrades);

- International Atomic Energy Agency (Core conversion and facility upgrades & Regional project);
- Ecolé Polytechnic de Montreal, Canada (Core conversion);
- University of Chicago, Argonne National Laboratories, USA (Core calculations);
- The World Academy of Sciences, Italy (Research fellows);
- Food and Agriculture Organization of the United Nations (Mercury in fish);
- Polytechnic of Namibia, Namibia (Air quality);
- British Geological Survey, UK (Trace element geochemistry);
- University of Utah, USA (Trace element geochemistry);
- Institute of Earth Sciences, Taiwan (Cd isotope geochemistry);
- Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, China (Remediation of trace in soils using phytomimic);
- Dublin City University, Dublin, Ireland (carbon sequestration in soils).

Awards and Honours

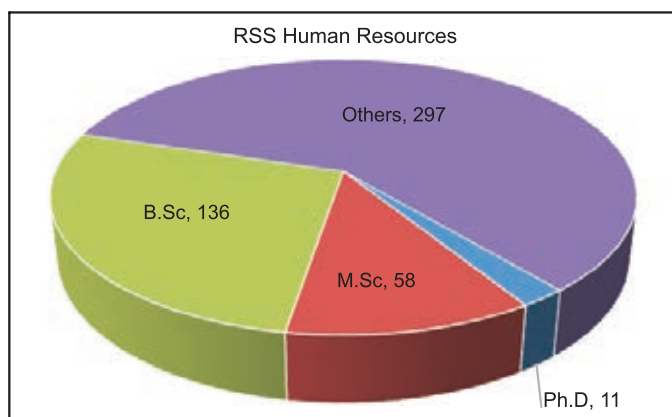
- A participant from ICENS received the 'best poster' award for the poster entitled 'Sourcing the provenance of Jamaican Cannabis from four locations by elemental profiling using Instrumental Neutron Activation Analysis', at the Joint International Conference on Nuclear Analytical Methods in the Life Sciences (NAMLS11) and Modern Trends in Activation Analysis (MTAA 14).
- Another participant received the 'David H. Byron Award' for the best poster presented during the FAO /IAEA International Symposium on Food Safety and Quality: Applications of Nuclear and Related Techniques, Vienna, Austria.

Publications

During the year, ICENS' academic contribution included 2 book chapters, 4 papers, 6 conference proceedings and two conference posters.

Royal Scientific Society (RSS), Jordan

The Royal Scientific Society (RSS) is the largest applied research institution of Jordan providing consultancy, and technical support services. RSS was established in 1970, aiming to be the local and regional reference point of knowledge for science and technology, using modern engineering research as a base to empower economic development and social progress.



Major Research Activities

Some of the major research activities carried out by RSS in 2015 are the following:

- The National Energy Research Centre (NERC) at RSS launched the Lighting Test Lab in October 27, 2015.
- On January 20, 2015, RSS launched the project 'Promoting Water Use Efficiency in Green Schools' funded by USAID.
- The Centre for Excellence in Biosafety, Biosecurity and Biotechnology was established on 1st October 2015.
- RSS completed the activities under the project 'Expanding access to sanitation in unsewered communities in Jordan', June 2015.
- RSS started developing the concept of using the nanoparticles in water and wastewater treatment.
- Four projects were funded to support Research, Technological Development and Innovation in Jordan (SRTD - II), namely: i) Turning industrial wastewater to wealth-biodegradable plastics; ii) Investigation of Ready Mix Concrete Performance Utilizing Recycled Waste Water in Jordan; iii) Investigating Novel Materials to Purify and Store Green Hydrogen Utilized in Powering Proton Exchange Membrane (PEM) Fuel Cell Stacks; iv) Arab Fuel Cell and Multi-Purpose Electrolyzer Powered by Solar Energy.
- Three projects were funded by Scientific Research Support Fund/Ministry of Higher Education of Jordan, namely: i) A Green Method for Biosynthesis Sulfur Nanoparticles for Control Soil Borne Pathogens; ii) Synthesis of Enantiopure Drugs Using Alcohol Dehydrogenase Enzyme Produced from Halophilic Bacteria Live in the Dead Sea; iii) Low Temperature Retorting of Jordanian Oil Shale.
- RSS registered three patents in Jordan and filed one patent in USA during 2015.



Capacity-Building Activities

The following conferences, seminars and workshops were organized and/or had participation of RSS in the year 2015 as part of its capacity-building activities:

- Workshop on 'Energy Efficiency Standards and Labelling Project in Jordan' (February 4, 2015);
- Workshop on 'Civil Initiatives to Enhance Environmental Resilience in Jordanian Communities that Host Syrian Refugees' (September 9, 2015);
- Training course on 'Jordanian Green Buildings Guide Manual' (November 11, 2015);
- Workshop on 'Environment-friendly Technology in Food Industries in Collaboration with UNIDO and European Union' (June 8, 2015);

- Three training workshops for Fostering Solar Technology in the Mediterranean area (FOSTER in MED) (September and October 2015);
- The third annual Workshop on 'Software Quality in Jordan 2015', (October 5, 2015);
- A specialized training course entitled 'Certified Ethical hacking' (April 14 to May 5, 2015);
- Biorisk Management Training Course at RSS, funded by CRDF (May 17-21, 2015);
- Workshop on Knowledge Economy, in collaboration with Ministry of Education- and the Jordan National Commission for Education Culture and Science (May 27, 2015);
- Workshops on SWITCH-Med Transfer of Environmental Sound Technology (TEST) II in Food and Beverages Industries (June 9, 2015).



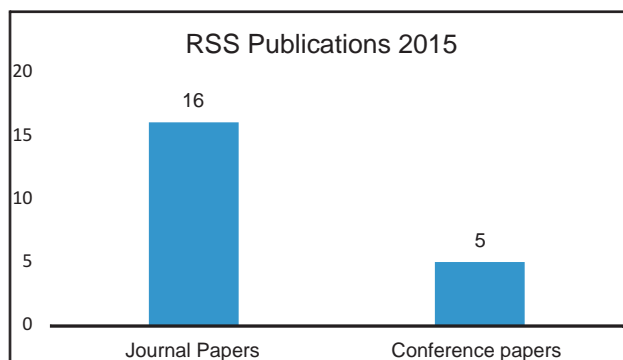
International Collaborations

RSS strengthened its international linkages by signing the following international agreements in 2015:

- Agreement with World Bank for Partnership for Market Readiness in Climate Change Mitigation in Jordan (January 1, 2015);
- Agreement with UNIDO on 'Provision of services relating to the implementation of the sub-component 1-Demonstration of the SWITCH-Med Programme – MED TEST II in Jordan' (March 3, 2015);
- Agreement with University of Arizona, USA, to cooperate in the areas of research and education (June 4, 2015);
- Agreement with Enviro Loo Sanitation Company, South Africa, on testing and piloting the dry sanitation units in poor urban communities (August 6, 2015);
- Agreement with Development Alternatives Inc. (DAI) on SWOT analysis of potential of installing decentralized wastewater treatment units in Jordan (November 2, 2015);
- Agreement with Jordanian Ministry of Environment and UNDP to prepare Jordan's first Biennial Report on Climate Change (December 1, 2015).

Awards and Honours

- Prof. Farqad Al-Hadeethi, Senior Researcher and Coordinator of Scientific Research at RSS received the Gold Award from the Emirates Energy Award 2015, in recognition of his achievements in the field of generation of electricity and drinking water from sea water using hydrogen.
- RSS was honoured for its efforts in environmental protection.

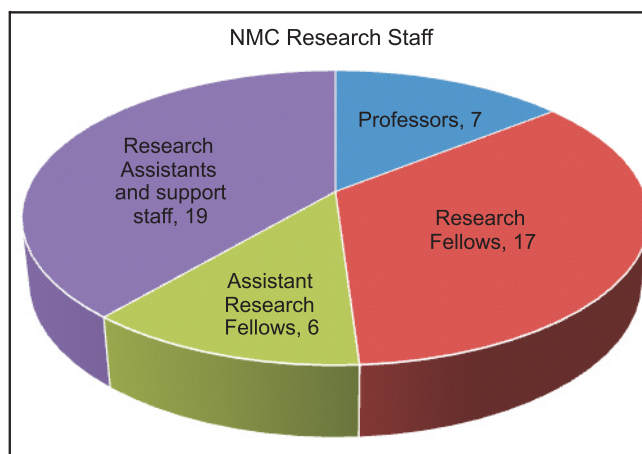


Publications

- A total of 16 papers were published by RSS scientists in different journals besides 5 conference publications.

National Mathematical Centre (NMC), Nigeria

National Mathematical Centre (NMC), Nigeria, was established in 1989 as an interuniversity organization with a mandate to promote research and generate capacity in mathematical sciences. Research and capacity-building activities of NMC revolve around taking appropriate initiatives and developing capacities of international standing for sustaining interest in mathematical sciences at all levels of education and real-life applications.



International Collaborations

- As a result of an MoU signed between the NMC and UNESCO, 'The UNESCO Chair Programme on Mathematics' at NMC was formally inaugurated by the Representative of the Honourable Minister of Education. Other dignitaries who took part in the event included: the Secretary General Nigerian National Commission for UNESCO (NATCOM), Officials of UNESCO, National



Universities Commission (NUC), and Vice Chancellors of several Nigerian universities.

- Two Resource Persons from Minerva University, Dr. Rena Levit, and Mrs. Fatou Badiane-Toure conducted a two-day training for the International Olympiad Students and Trainers (23-24, July 2015). The NMC signed an MoU with the Minerva University, San Francisco, in the area of talent hunt and grooming it to become world-class.

Capacity-Building Activities

The following capacity-building activities were organized/hosted by NMC during 2015:

- One-day Workshop on Algebra (13 January 2015);
- International Conference on Mathematical Modeling and Simulation (28-29 December 2015);
- Second Meeting of COMSATS' ITRG in Mathematical Modeling (30 December 2015);
- Pan African Science Olympiad (PASO), Pan African Mathematics Olympiad (PAMO), Pan African Mathematics Olympiad for Girls (PAMO-G) (August 2015);
- NMC Graduate Foundation School (January-March 2015);
- Workshop to introduce their staff to IBM's global educational programme 'Teachers Try Science' (1 July 2015);
- MoU signing with National Information Technology Development Agency (NITDA) of Nigeria for training and developing the Nigerian youth to become world-class software developers (16 February 2015).

Awards and Honours

NMC won recognition at a number of international events, these included:

- International Mathematical Olympiad (IMO) in Chang Mai, Thailand, July 2015 (Two Honourable Mentions);
- International Physics Olympiad (IPhO) in India, July 2015 (One Honourable Mention);
- International Chemistry Olympiad, Baku, Azerbaijan, July 2015 (One Youngest Contestant; One Most Dedicated,





- Committed and Determined Contestant);
- Pan-African Science Olympiad (PASO), Abuja, Nigeria, August 2015 (Best Country);
- Pan-African Mathematics Olympiad (PAMO), Abuja, Nigeria, August 2015 (Best Country);
- Pan African Mathematics Olympiad for Girls (PAMO-G), Abuja, Nigeria, August 2015 (Second Best Country).

Moreover, Prof. A.R.T. Solarin, Director NMC was appointed as members of the Scientific Board of the International Basic Sciences Programme (IBSP) of UNESCO.

COMSATS Institute of Information Technology (CIIT), Pakistan

COMSATS Institute of Information Technology (CIIT) was founded in 1998 with the establishment of its first campus in Islamabad, Pakistan. In August 2000, the Federal Government of Pakistan granted CIIT the status of a degree-awarding institute through the promulgation of its Charter. CIIT has now acquired the status of a reputed Higher Education Institution (HEI). The case for declaring CIIT as COMSATS University is under consideration of the Parliament. Besides its Principal campus in the Pakistan's Federal capital, Islamabad, CIIT has six other fully functional campuses in Abbottabad, Attock, Lahore, Sahiwal, Vehari and Wah, as well as a Virtual Campus.



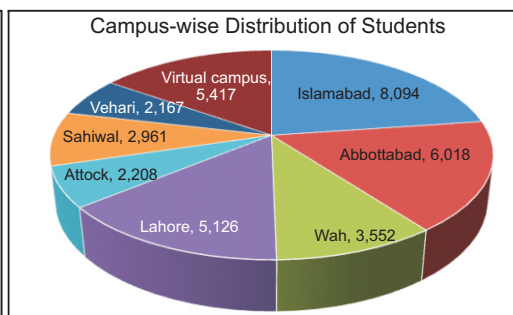
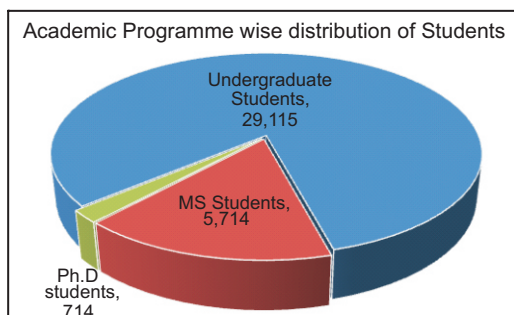
Organization of International Events

During the reporting period, CIIT organized the following international events:

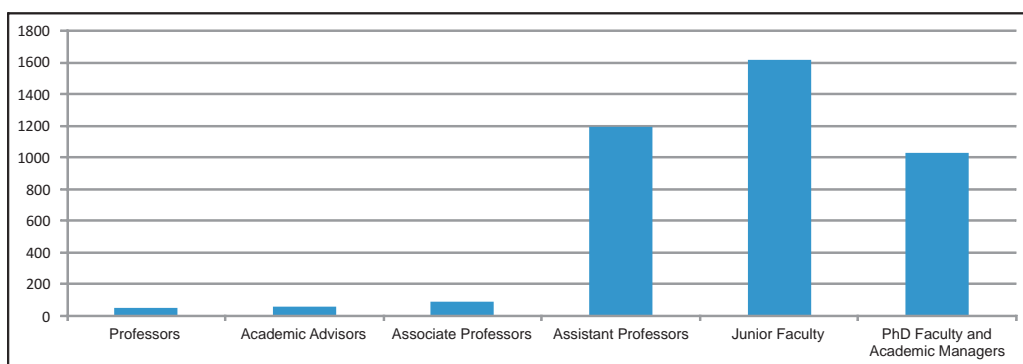
- Pak-China Business Forum 2015 (27-30 March 2015);
- 7th South Asian international Conference (SAICON) 2015 (19-21 August 2015);
- Vice Chancellors' Forum 2015 (23-24 February 2015);
- 3rd Global Forum on Islamic Finance (GFIF) 2015 (10-11 March 2015);
- International Conference on Frontiers of Information Technology (FIT) 2015 (19-21 December 2015).

Current Statistics of CIIT	
Total No. of Students	35,543
Total Faculty	3,118
Staff Strength	3,245
Academic Programmes	97
Departments	18
Research Centers	10
Laboratories	270

Student Enrollment 2015



CIIT Faculty 2015



Apart from the aforementioned serial events, the following events took place during the year:

- International Symposium on 'Life and Light ' (14-16 October 2015);
- Inauguration of "Between the Lines" Exhibition, (26 February 2015);
- UN Corner Design Competition & MoU signing with UNIC (23 February 2015);
- EMMA 3 Meeting (12-14 May);
- Solo Painting Exhibition of Trade Representative of the Russian Federation (22 December 2015);
- Master Class Address by the Nobel Laureate Mrs. Tawwakol Karman on Human Rights and Women Empowerment (2 December 2015).

Moreover, Mr. Shahid Kamal, Adviser/In-charge Centre for Climate Research & Development (CCRD) attended the UN Climate Conference (COP21) in Paris (30 November - 12 December 2015).

International Collaborations

International Visitors

CIIT's efforts for internationalization of its operations are aided by visits from international dignitaries, delegates and interactions with foreign missions in the country and representatives of international organizations. During the period of Jan.-Dec. 2015, around 112 individuals hailing from various countries, such as, France, U.S.A, Germany, Canada, U.K, Australia, Portugal, Turkey, Malaysia, Belarus, Indonesia, Japan, China, Morocco, Saudi Arabia, Iran, Ivory Coast, the Philippines, Afghanistan, Uganda, Cameroon and Tunisia visited CIIT. The visits of these academicians and technocrats were of great significance to CIIT because of their contributions towards enhancing the quality and research, on one hand, and making the research products



commercialized on the other. The visits also imparted training in entrepreneurship skills in the young scientists of CIIT. In this regard, some notable visitors were as follows:

- Dr. Amina Al Hajri, Deputy Director General Islamic Educational, Scientific and Cultural Organization (ISESCO);
- His Excellency M. Naeem Khan Assistant Secretary General, Organization of Islamic Conference (OIC);
- Representatives of diplomatic missions of Republic of Belarus, Republic of South Africa, UK, and Finland;
- Representatives of University of Nice, France; University of Bonn, Germany; University of Southampton, UK; National Academy of Sciences, Belarus; Stratford University, and Fairfax Virginia, USA; Deakin University (DU) and Macquarie University, Australia; European University of Lefke (EUL), North Cyprus; Gediz University, Ipek University, Zirve University, International Antalya University, Meliksah University, Ipek University, and Mevlana (Rumi) University, Turkey; University Technology PETRONAS (UTP), Malaysia; University of Evora, Portugal; (USA); Otto-von-Guericke University, Germany.

Moreover, forty three individuals, including faculty members and senior officials of CIIT, visited various leading universities across the world such as China, Malaysia, UK, USA, Dubai, Taiwan, Geneva, Sri Lanka, Netherlands, Ghana, Switzerland, Italy, Russia, France, Kingdom of Saudi Arabia, the Philippines and Bangkok, etc. These included representation in the 20th Session of FUIW's Executive Council; visit to CERN; and representation at University Presidents Forum 2015.

MoUs and Agreements

During 2015, visits of various delegations resulted in signing of 25 national and 46 international Memoranda of Agreement. The main purpose behind signing the documents was to exchange the faculty, students' mobility, joint research programmes, etc. Efforts were made to ensure that effective implementation of these agreements takes place.

Like EMMA, Third World Academy of Sciences (TWAS) also collaborated with CIIT in 2015. Under this collaboration, 26 CIIT-TWAS research fellows – 19 Ph.D., 5 Postdoc and 2 Senior Research Fellows have been finally approved to come to CIIT for doctoral and postdoctoral research work from Fall Semester 2016.

Senior Expert Services Provided to CIIT

COMSATS Institute of Information (CIIT) has been benefiting from the invaluable assistance of Senior Experts from the Senior Expert Services (SES), Germany, since 2010. In the year 2015, CIIT benefitted from the services of the Mr. Manfred Hake, Senior Specialist from SES. He visited CIIT for two weeks in October 2015.

First Joint Pakistan-Belarus Young Scientists Forum in Minsk

CIIT together with the Pakistan Academy of Sciences (PAS) coordinated with the National Academy of Sciences (NASB) to organize the first Joint Pakistan – Belarus Young Scientists Forum in Minsk from 4th to 10th October 2015. The major purpose of

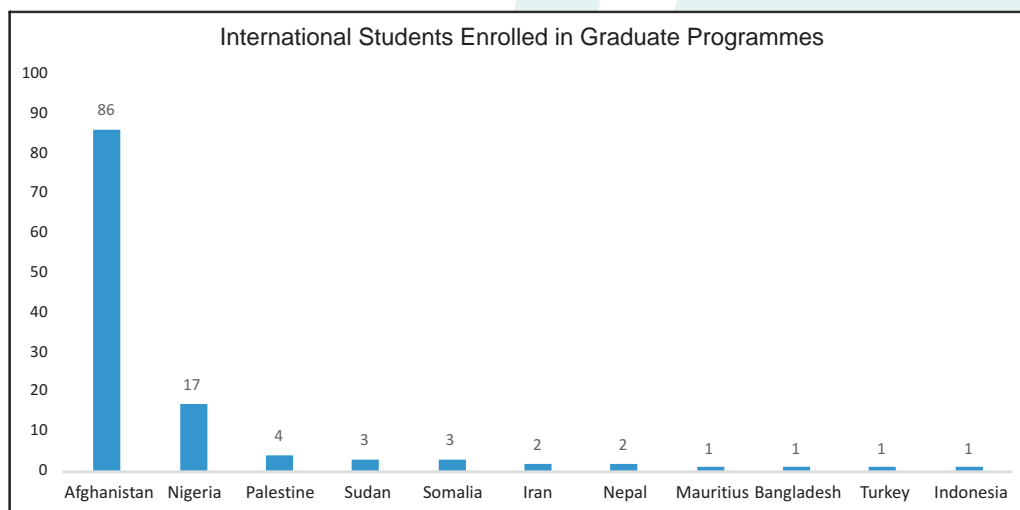
this forum was to strengthen the coordination and communication among early to mid-career scientists and researchers of both countries, with the intention of providing an enabling environment to conduct effective and result oriented joint research and collaboration in high priority areas of science and technology.

US Fulbright Specialist Programme

CIIT's Virtual Campus has an emerging Leadership Management System as well as a blend of online and distance learning platforms. However, senior academics felt the need to develop further resources and capacity for which they sought training from internationally acclaimed and established experts in this field. In this connection, under the US Fulbright Specialist Programme, Dr. John Tashner of Appalachian State University, North Carolina, USA, was engaged by CIIT Virtual Campus.

International Students

Enhancing intake of foreign students is important as per CIIT's internationalization policy and it welcomes eligible students from around the world. In order to attract international students and provide opportunities for quality higher education, CIIT offers scholarships to various foreign governments and organizations. During 2015, a total of 121 international students from following eleven countries were enrolled in different BS/MS Programmes of Electrical Engineering, Mathematics, Meteorology, Management Sciences, Physics and Bio-sciences departments.



Major Research Activities

- During 2015, a total of 223 research projects and 166 travel grant applications were submitted to different funding agencies, out of which 133 projects and 48 travel grant applications have been approved.
- CIIT's Office of Research, Innovation and Commercialization (ORIC) diversified the Institute's research portfolio by identifying and submitting research proposals to multi-faceted national and international funding agencies.
- Institutional arrangements for seeking funding, individual researchers, especially those recruited under 'Interim Placement of Faculty Hiring Programme' (IPFP), were also gathered and motivated to write grant proposals and win the projects. Resultantly, the funding secured from various sources has come up to Rs 280.0 million in 2015.
- To attract young faculty into the research mainstream, a CIIT Research Grant Programme (CRGP) is in place to award grants up to Rs. 200,000/- for research proposals of 1-2 years duration. In 2015, 43 research proposals were approved/ released to the awardees under this programme.
- The following patents were acquired during the reporting period:
 - 'Generation of high power pulse-laser using field generated coherence';
 - 'System and Method for Uninterrupted Communication across black spots for Multi Interface Mobile Nodes'.
- CIIT has initiated development of a series of business/technology incubators named 'CUBATORS'. There are currently 45 companies which have been hosted at our incubation centres at CIIT Islamabad campus.

Training Activities

Interim Placement of Fresh Ph.Ds Programme (IPFP)

CIIT is actively inducting trained Ph.Ds under Higher Education Commission (HEC) of Pakistan based Interim Placement of Fresh Ph.Ds Programme (IPFP). During January to December 2015, CIIT selected 52 Ph.Ds in its effort to reach its target of acquiring 1,500 Ph.D faculty members in the system by 2020.

Activities of Faculty Development Academy

During the period from January-December 2015, Faculty Development Academy (FDA) arranged 20 training courses/workshops on diverse topics, such as 6th pre-



service training course, GRE-preparatory course, testing and assessment, etc.

Endowment Fund

The CIIT Endowment Fund is an approved non-profit organization, entitling the donor to claim income tax rebate on the amount donated.

The Endowment Fund Scholarship is only a small part of the total Scholarship Portfolio at the CIIT. Whereas, the EF scholarship amounts to PKR 28.00M, total amount disbursed during financial years 2013-14 and 2014-15 were Rs. 745 million and Rs. 865 million, respectively. Total numbers of the beneficiaries during these two years are 8,858 and 6,500, respectively. By the close of FY 2014-15 Rs. 40 million was spent on financial support of needy students of CIIT.

Awards and Honours

A total of 15 Awards were received by CIIT during the period January-December 2015 from various prestigious institutions, such as the Higher Education Commission and the Government of Pakistan. These included the following:

- i. Rector CIIT, Dr. S. M. Junaid Zaidi, was awarded the prestigious national civil award 'Hilal-i-Imtiaz' by the Government of Pakistan.
- ii. Dr. Saddam Hussain, Head of Management Sciences Department, CIIT, Attock, and Mr. Hassan Qayyum, Department of Chemical Engineering, CIIT, Lahore, secured two awards from the Commonwealth Universities.
- iii. Professor Peter Langer, Chemistry Professor at the University of Rostock, Germany, was conferred the 'Quaid-e-Azam Award' by the Government of Pakistan.
- iv. Dr. Arshad Mehmood Abbasi, Assistant Professor, Department of Environmental Sciences, CIIT Abbottabad won 'Best Book Award' under the programme 'HEC Outstanding Research Awards' for his book titled 'Medicinal Plant Bio-Diversity of Lesser Himalayas-Pakistan'.
- v. Dr. Zulfiqar Ahmad Bhatti, Assistant Professor, Department of Environmental Sciences, CIIT Abbottabad has won Innovation Award for his project titled 'Industrial Water Treatment'.
- vi. Mr. Ammar Zia ud Din Qazi, Assistant Registrar Exams, Registrar Secretariat, CIIT Islamabad has received an ACU Titular Fellowship, Jacky Maclear Award.
- vii. Dr. Muhammad Shahbaz, Associate Professor, CIIT, was ranked 2nd among top 200 young economists of the world.
- viii. Ms. Farrah Adnan, Associate Professor, Department of Architecture, CIIT, Islamabad, painting was selected for the Sovereign Asian Art Prize 2015, in Hong Kong.
- ix. HEC Awarded Highest Category 'W' in the Yearly Progress Report Score Card - YPR 2014-15 to Quality Enhancement Cell (QEC) of CIIT, Islamabad.

Publications

During 2015, CIIT reached crossed the mark of a 1,000 impact factor research publications, making it the first and only seat of higher learning in Pakistan to have done so. Dr. Muhammad Shahbaz, an Associate Professor at CIIT, achieved individual hallmark of 200 Impact Factor.



Industrial Technology Institute (ITI), Sri Lanka

The Industrial Technology Institute (ITI), Sri Lanka, is a statutory board established on 1 April 1998, by virtue of the Science and Technology Act No. 11 of 1994 passed by the Parliament of Sri Lanka. ITI is the successor to the Ceylon Institute of Scientific and Industrial Research (CISIR), which was established in 1955. ITI operates as a market-driven partner to its client and stakeholders. Wholly owned by Sri Lankan government, ITI is a well-recognized institute both locally and internationally. Over the last 60 years, ITI has rendered services to firms involved in businesses for local and foreign markets, national infrastructure development projects and overseas laboratories.



Participation in COMSATS' International Events

ITI hosted the following COMSATS' related activities during 2015:

- The 18th Meeting of COMSATS Coordinating Council (12-13 May 2015);
- The 4th meeting of COMSATS' ITRG on 'Climate Change and Environmental Protection' (16 May 2015).



Capacity-Building Events

Following are some major capacity-building events of ITI during the reporting period:

- International Symposium on 'Impacts of Extreme Atmospheric Events' (14-15 May 2015);
- ITI Biennial Research Symposium on 'Science, Technology and Innovation for Knowledge Based Economy' (16-17 November 2015);
- Establishment of a new Chemical Residue Unit (CRU) (26 August 2015).

International Collaborations

In order to further strengthen R&D activities of the Institute, a number of international collaborations were fostered during 2015. These included:

- Joint research project on 'Post-harvest Technologies' with IDRC-Canada, University of Guelph, Guelph, Ontario, and Tamil Nadu Agricultural University (TNAU), Coimbatore, India;
- India-Sri Lanka Intergovernmental S&T Cooperation Programme on 'Ensuring Human Health, Food & Nutritional Security through Novel Cereal and Fruit based prebiotics with International Crops Research Institute for the Semi-Arid Tropics' (ICRISAT);
- A research project for identifying biologically active natural product from the selected Sri Lankan marine algal species, funded by Korean Institute of Ocean Science and Technology;
- Collaboration with Department of Medicinal and Biological Chemistry, College of

Pharmacy and Pharmaceutical Sciences, University of Toledo, USA;

- MoU with International Center for Climate and Environmental Sciences (ICCES), Chinese Academy of Sciences, to establishment China-Sri Lanka joint Climate Research Centre at ITI;
- MoU on Co-establishing China – Sri Lanka joint laboratory on Biotechnology at ITI between Ministry of Science, Technology and Research of Sri Lanka and Ministry of Science & Technology of the People's Republic of China.



Awards and Honours

The following officials affiliated with the Institute received awards and recognition during the year:

- Mr. Anura Sooriya Arachchi won the 'Geneva International Invention Award Gold Medal' at the 43rd International Inventors Exhibition and Competition in Geneva, for invention of 'Safety Coconut Husk Feeding Mechanism to Extract Bristol Fibre from Traditional Fibre Extraction Process'.
- Dr. G. A. S. Premakumara, Dr. P. N. R. J. Amunugoda, Dr. R. M. Dharmadasa and Mr. Kosala Samarasinghe received 'Presidential Awards for Scientific Publications 2013', organized by National Research Council (NRC), Sri Lanka.
- Mr. Chinthan Manoratne and Dr. Kanchana Abeysekera received the NRC Merit Awards for research publication on nanotechnology and cereal chemistry, respectively.
- Dr. Kanchana Abeysekera won the General Research Committee Postgraduate Award from Sri Lanka Association for the Advancement of Science for his research on 'Physicochemical and bioactive properties of some Sri Lankan traditional rice varieties'.

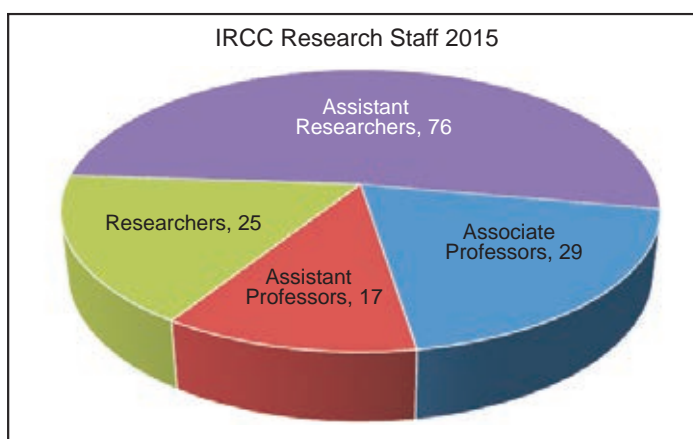


Industrial Research and Consultancy Centre (IRCC), Sudan

The Industrial Research and Consultancy Centre (IRCC), Sudan, was established in 1965 with the assistance of the United Nations Industrial Development Organization (UNIDO). The Centre is affiliated with the Ministry of Industry, Government of Sudan. IRCC has a mandate to undertake industrial research and consultancy services and disseminate findings that can have a positive impact on national industrial development. IRCC performs its functions through capacity-building activities, mobilizing high-caliber professionals, modernization of the centre's infrastructure in line with the demands



and expectations of the Sudanese industry, as well as enhancing local collaborations and networking.



Capacity-Building Events

In 2015, IRCC organized and participated in 19 domestic and 19 international conferences, workshops and training courses. These trainings were held on topics including: Cleaner production; intellectual property; environmental impact of mining; as well as modern trends in liquidity; internal audit; cash flow management; and crisis management. IRCC also organized the IRCC-UNIDO meeting on 'Production and Utilization of Moringa Oleifera' (24 February 2015).

Participation in International Events

- Dr. Widad Hassan, Director General of IRCC, represented the Centre at the Global Network Conference on Resource Efficient and Cleaner Production (RECP), Davos, Switzerland (12-16 October 2015);
- As a member, Dr. Hassan also participated in the 18th Meeting of COMSATS Coordinating Council, hosted by the Industrial Technology Institute (ITI) Colombo, Sri Lanka (12- 13 May 2015);
- IRCC was also represented at the following:
 - 7th Arab International Conference for Information Technology, Morocco (19-21 May);
 - Research and Innovation in the Framework of the European-Arab Cooperation, Egypt (11-12 February 2015);
 - Training course on 'Design of Science, Technology and Innovation Policies in OIC Member States', Iran (24-26 February 2015);
 - Meeting of Technical Committee for Science and Technology and Innovation, Kenya (24-26 February 2015).

Research and Development

IRCC has the following major departments:

- The General Directorate for Institutes of Research and Development of Materials

- and Industrial Economies;
- The General Directorate for Institutes of Research and Development of Industrial Engineering and Technology;
- The General Directorate for Financial and Human Affairs;
- Leather Industry Research Institutes Department;
- Research Services Department; and
- Department of Technology Transfer and Localized and development.

During 2015, R &D activities were carried out at these departments that pertained to the following:

- Utilization of Soybean Seeds in Food Industries;
 - Quality Assessment of Soybean Cultivates under Sudan Environment;
 - Utilization of Soybean flour in the manufacturing of cereal products (Bread , Biscuits);
 - Utilization of Soybean milk in Manufacturing of fermented milk products fermented;
 - Characterization of Soybean oil (variety Sudan 1) and its utilization in some food products.
- Improvement of Sudanese national footwear(markup) design and manufacturing;
- Competitive ready garment industry;
- Design of control circuit for oven 1200°C;
- Raising the efficiency of sugar boilers using electronic control technology.

International Collaborations

- IRCC signed an agreement with the Federal Ministry of Health (FMoH), Ministry of Industry (MoI), Government of Red Sea State, for a project that would have the patronage of the Sudanese Chamber of Industries Association (SCIA), Giad Industrial Group of Companies and Union of Salt Producers Red Sea State.
- On June 14-28, 2015, IRCC participated in the 5th 'Made in Sudan' Exhibition and exhibited Soybean flower products, as well as textiles and leather products.

B. HIGHLIGHTS FROM OTHER CENTRES OF EXCELLENCE

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

The Iranian Research Organization for Science and Technology (IROST) was founded in 1980 in Tehran shortly after ratification of IROST's Statute by the Council of Islamic Revolution, with the aim of providing support to Iranian researchers, inventors and industrialists across the country. IROST is one of the leading Iranian organizations for science and technology (S&T) that mainly aims at achieving independence in scientific and technological pursuit of the country by supporting and exploiting the potential offered by the Iranian inventors, innovators, researchers and industrialists, and responding to the increasing demands for S&T development programmes. This organization supports Iran's applied and developmental research, as well as develops new technologies by making use of qualified experts and modern equipment and facilities.



International Cooperation

- IROST and the Islamic Development Bank (IDB) signed a protocol for scientific and technological cooperation on January 13, 2015.
- IROST and the OIC Standing Committee on Scientific and Technological Cooperation (COMSTECH) signed an MoU on joint scientific and academic cooperation on the sidelines of the first NAM Summit of Ministers of Science and Technology, hosted by the Islamic Republic of Iran, during February 22-24, 2015.
- IROST signed a Memorandum of Agreement (MoA) with International Neuroscience Institute of Hannover, Germany, on October 18, 2015, to establish Madjid Samii International Center of Scientific Research and Medical Technology.
- IROST and the University of Sistan and Baluchestan (Zahedan, Iran) signed an MoU, on June 22, 2015, for cooperation in different fields of science and technology, including renewable energy and technology, agriculture, chemical technology and advanced materials, biotechnology, and information technology.
- On October 18, 2015, a Memorandum of Agreement (MoA) was signed to establish Madjid Samii International Center of Scientific Research and Medical Technology (MSIC) in Iran, to be hosted by IROST.



Research Activities and Initiatives

- Researchers at IROST have developed a special vaccine to counter bacterial diseases in cold-water trout. The vaccine helps fish in developing significant

antibody responses to bacteria. The researchers also successfully completed field trials of the vaccine in some of the trout hatcheries and achieved satisfactory results.

- Prof. Nasrin Moazami of IROST, a distinguished Iranian biotechnologist, had the honour of briefing the Iranian President, Hon. Mr. Hassan Rouhani on his visit to Qeshm Microalgae Biorefinery (QMAB) in Tehran. Prof. Moazami greatly stressed the significance of developing QMAB as the first and largest microalgae biotechnology company in the Middle East.

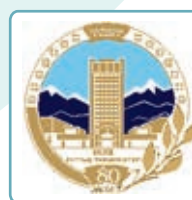
28th Khwarizmi International Award Ceremony

The award ceremony of the 28th Khwarizmi International Award (KIA) was organized by IROST, on March 3, 2015. H.E. Dr. M. Farhadi, Iranian Minister of Science, Research and Technology; Dr. Sorena Sattari, Vice President of Science and Technology; Dr. Ahmad Akbari, Vice Minister and President IROST; and Dr. M. Mehdi Zahedi, Head of Education and Research Commission of Iranian Parliament, graced the occasion with their presence. COMSATS was one of the sponsors of KIA.



Al-Farabi Kazakh National University (KazNU), Kazakhstan

Al-Farabi Kazakh National University is the oldest classical university of the Republic of Kazakhstan and the leading institution in the system of higher education of the country. The University is aimed at: training and producing highly qualified professionals; integrating into the global educational space; and undertaking fundamental and applied research, and their implementation into the production. The University is the recipient of the first winner of Presidential Award of the Republic of Kazakhstan 'for achievements in the area of quality' in the history of the country; Award of the Commonwealth of Independent States (CIS) countries for achievements in the area of quality and services, and a signatory to Great Charter of Universities in Bologna.



Awards and Honours

- Six scientists of Al-Farabi Kazakh National University (KazNU), Kazakhstan, were awarded the State Al-Farabi Award of 2015 in the field of Science and Technology by the President of the Republic of Kazakhstan. They received the award for their collective research work on 'Quantum and Collective Properties of Plasma: Theoretical Bases of New Technologies'.
- KazNU was recognized as the 'Best Multidisciplinary Higher Education Institution' in 2015 according to the National Ranking of Kazakhstan. The final evaluation results for KazNU were 98 out of 100 possible points.

Capacity-Building Activities

- KazNU has established a new Medical Department – the Higher School of Public Health Care (HSPHC) – which is the fifteenth faculty of KazNU. The School is at par with international standards and would cater to education of medical personnel for bachelors, magistracy, residency and doctoral level studies.
- On October 28, 2015, a round table meeting titled 'Key Priorities of Socio-economic and Environmental Development of the Country in the Context of Global Challenges' was organized by Al-Farabi Kazakh National University (KazNU), Kazakhstan, at its Higher School of Economics and Business.



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

The International Center for Chemical and Biological Sciences, Pakistan, is one of the best academic research institutions in chemical and biological sciences in the developing world. It is a designated Center of Excellence of OIC, TWAS, UNCSTD, WAITRO, and COMSATS. The Center has also been recognized as UNESCO Category-II institution. The Center carries out research, training, product development and service delivery, as well as provides diagnostic, analytical and clinical testing services to a broad range of clients in the public and private sectors. ICCBS produced over 500 top-class PhDs in the field of chemical and biological sciences.



Awards and Recognition

ICCBS is to be designated as the UNESCO Category-II Institute. In this connection, Dr. Ahmed Fahmi, UNESCO Programme Specialist in S&T for South Asia, called on the Patron-in-Chief ICCBS, Prof. Dr. Atta-ur Rahman, and Director ICCBS, Prof. Dr. M. Iqbal Choudhary, to finalize the procedures for designating the status to ICCBS as

'UNESCO Center for Excellence Category-2 Institute'. Dr. Fahmi's visit to the Center was one of the final steps to the declaration, as ICCBS had already been under review for the last many years for the said status by UNESCO.

Capacity-Building Events

During the year 2015, ICCBS organized a number of online lectures, seminars, and workshops. The activities organized and conducted in this regard covered the themes, such as Entrepreneurship for Scientists; Advanced Immunology; Plant Remedies used Against Skin Diseases in Sindh; and Drug Discovery and Molecular Medicine.

These included two lectures by Director ICCBS, Prof. Dr. M. Iqbal Choudhary, on the topics: 'Single Crystal X-ray Diffraction Technique - Basic Principles'; and 'NMR Methodology Developments in the Investigation of Complex Mixtures in Natural Products and Food Chemistry: From Chemical to Analysis Metabolomics' (18-22 September 2015).

Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

TIRDO is a parastatal organization which was established by an Act of parliament (No. 5 of 1979) and became operational in April 1979. Basically, the organization was set up for the purpose of conducting industrial research and offer consultancy/technical services to industries.



Its mission is to conduct research, development and technical services on industrial processes and products, while utilizing local materials, in partnership with the industries

Capacity-Building Activities

- During the year 2015, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania, has received laboratory equipment for carrying out food proximate analysis, under the UNIDO's Industrial Upgrading and Modernization Programme (IUMP) in the country. The equipment included, Kjeldahl and Soxhlet apparatuses, rotary evaporator, oven and muffle furnace.
- Under a collaboration with Swedish International Development Cooperation Agency (Sida), two of TIRDO staff members received three-week long training in Sweden.
- Dr. Mihayo Musabila attended the Advanced International Training Programme (ITP) on 'Strategies for Chemicals Management', from 2nd to 24th March 2015, in Stockholm. The training was aimed at formulating organizational arrangements for conducting chemical control, as well as developing an action plan at country-level.
- A TIRDO researcher, Dr. George Oreku, attended training on the 'Use of ICT in Education' (Primary and Secondary education) under a similar programme of Sida.

TÜBİTAK Marmara Research Center (MAM), Turkey

TÜBİTAK Marmara Research Center (MAM) has been at the forefront of science and technology development in Turkey. Established in 1972, TÜBİTAK MAM is now an internationally reputed S&T organization. MAM conducts research on advanced and conventional technologies to improve the competitiveness of Turkish industry, and identifies solutions for technological problems, ensuring the application of the developed technological solutions. The vision of TÜBİTAK MAM is to be ranked among the leading science and technology centers of the world in the field of applied research; and its mission is to contribute towards improving of the global competitiveness of Turkey based on science and technology.



International Collaborations

- President TUBİTAK MAM undertook a visit to Singapore as part of a high-level country delegation to learn about regional technoparks and to develop bilateral cooperation agreements between Singapore and Turkey.
- The TÜBİTAK MAM has signed an MoU with Uganda National Council for Science & Technology (UNCST), and Tanzania Industrial Research and Development Organization (TIRDO) for cooperation in 'Energy Research'.

Recent Initiatives

- TUBİTAK MAM held the annual 'Research and Support Awards' on June 16, 2015.
- TUBİTAK-MAM research was published in October issue of the journal 'International Bio-deterioration & Bio-degradation' to help improve municipal wastewater digesters. The research was carried out by Dr. Sedat Yalcinkaya, Senior Researcher at the Environment and Cleaner Production Institute of TUBİTAK MAM.

Capacity-Building Activities

The Environment & Cleaner Production Institute (ECPI) of TÜBİTAK MAM, in collaboration with the Inter-Islamic Network on Water Resources Development & Management (INWRDAM), organized the International Training Workshop on 'Sewage Treatment by Natural Processes; Constructed Wetlands' at Gebze, Kocaeli, Turkey, on December 14-18, 2015.



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REPORTS OF SPECIAL ASSIGNMENTS

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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 tele-health is being expanded. Another such project is the maintenance of COMSATS-ISESCO web-portal: Islamic-World Science Net (IWSN). The administration related to graduate students from Member States studying at CIIT is also a special assignment that the Secretariat undertakes. During the recent months, COMSATS' Science Diplomacy Programme has been given focused attention in view of the Council's aspirations.

REPORTS OF SPECIAL ASSIGNMENTS

Board of Governors, COMSATS Institute of Information Technology

COMSATS has an important role in the operations of COMSATS Institute of Information Technology (CIIT) as its Board of Governors is chaired by the Executive Director COMSATS. During 2015, one regular and four special meetings of the Board were held having special focus on CIIT's dual degree programme. Highlights of these meetings are given in reverse chronological order as follows:

Thirty First (Special) Meeting (30 November 2015)

The 31st meeting of the Board was held on 30th November 2015 to consider the letter received from the Lahore Office of National Accountability Bureau (NAB) of Pakistan, with regard to complaint verification process concerning CIIT's dual degree programme. The Board directed the Rector CIIT to send a letter to Chairman NAB with copy to Director General NAB, Lahore office, categorically stating that HEC has given post-facto approval of the CIIT-Lancaster University dual degree programme and that the BoG of CIIT had also agreed with the decision, therefore the issue stands resolved. The Board directed that contents of the letter shall be finalized by the Chairman BoG, Federal Secretary MoST, as well as the Rector and Registrar CIIT. The Board further advised for immediate issuance of degrees and transcripts to the students who have guaranteed, except for those enrolled in the engineering programme.

Thirtieth (Special) Meeting (22 October 2015)

The 30th meeting of the Board was held on 22nd October 2015 to discuss and consider actionable points arising from the discussion of the Public Accounts Committee meeting held on 8th October 2015 regarding CIIT's dual degree programme. In the

meeting of the Public Accounts Committee, it had been decided that HEC shall recognize the degree and transcript issued by CIIT only, however, it was agreed that joint transcripts may not be issued. The contents of the undertaking by CIIT agreeing to the latter part of the agreement were also approved. The Board agreed for the award of CIIT's degree and transcript to all the students who have completed education under the CIIT-Lancaster University dual degree programme.

Twenty Ninth (Special) Meeting (3 September 2015)

The 29th meeting of the Board, held on 3rd September 2015, also deliberated upon the one-point agenda taken up in the 28th meeting. During this meeting, the Board deliberated upon directives of the Government of Pakistan's Senate Standing Committee on Science & Technology. After detailed discussion on the issue, the Board agreed with the advice of CIIT's Legal Advisor and withheld any further action on the matter till it was sub-judice. It was also decided that a request on behalf of Board of Governors shall be made for constitution of the committee comprising Minister for Science & Technology; Minister for Federal Education and Professional Training; Chairman HEC; Chairman PEC; and Federal Secretaries of both the Ministries to discuss and resolve the matter.

Twenty Eighth (Special) Meeting (29 April 2015)

The 28th meeting of the Board was held on 29th April 2015. This meeting was special in nature and deliberated upon a one-point agenda, the CIIT-Lancaster University dual degree programme. The meeting was convened to review the recommendations of Pakistan's Federal Ombudsman regarding the dual degree programme. The Board deferred its decision on the matter but advised CIIT to suitably pursue the legal actions in this connection in the best interest of the students involved. The Board directed the relevant officials of CIIT to approach the Pakistan Engineering Council (PEC) for accreditation of degrees of its engineering programmes being offered under the dual degree programme.



Members and Participants of the 28th BoG meeting

Twenty Seventh Meeting (13 March 2015)

The 27th meeting of the Board was held on 13th March 2015. During the meeting, the Board approved the minutes of the previous meetings (25th and 26th). The Board deferred CIIT's - Lancaster University dual degree programme on account of being sub-judice in the Lahore High Court of Pakistan, and advised CIIT to pursue the matter with the Higher Education



27th Board of Governors meeting in progress

Commission (HEC) of Pakistan for an amicable resolution of the matter. The Board also agreed to request the Federal Secretary, Ministry of Science and Technology (MoST), Government of Pakistan, for expediting the legal process for the approval of draft bill for establishment of COMSATS' university. Progress, programmes and future plan of the Institute were also presented in the meeting. The Board desired to review the status report of the Ph.Ds produced by CIIT.

The Board also approved the recommendations made by the Institute's Academic Council in its 18th, 19th, 20th and 21st meetings. The budget and revised estimates for 2013-14, as well as budget proposal for 2014-15, presented to the Board were approved. CIIT's revised pension/retirement benefits statutes (2014) were also approved. Approvals were also accorded for the anticipatory actions taken by CIIT regarding constitution of Institute Discipline Committee, and establishment of Technology Park at CIIT Islamabad Campus, Pakistan.



Executive Director COMSATS chairing a meeting of CIIT Board of Governors

Board of Management, COMSATS Internet Services (CIS)

During the reporting period, no meeting of the Board of Management of COMSATS Internet Services was held, however follow-up and new activities were undertaken by the organization to achieve its goals. A brief report on CIS' activities is given as follows:

Activity Report

CIS has operations in 11 major cities of Pakistan. CIS' clients include well-known national and international companies and firms, software and business companies, foreign missions, consulates and embassies, non-governmental organizations, universities, and social development and research organizations. The ISP has also been involved with community-based projects, such as the Wireless for Communities (W4C) programme, and a



New Building of CIS Islamabad

network of Tele-Health centres in rural areas of Pakistan.

During 2015, CIS expanded its operations to three new cities, Gujranwala, Gujrat and Sukkur, in addition to its existing nodes in Islamabad, Peshawar, Lahore, Faisalabad, Sialkot, Multan, Karachi, and Quetta, reaching a total of 11 nodes across Pakistan. All processes and procedures at CIS are ISO 9001:2008 certified.

Data Centres

COMSATS Internet Services has well-equipped data centres offering a variety of services to its customers, like Virtual Private Servers (VPS), domain registration, website hosting, co-location of servers and rack space facility. These data centres provide hosting services on both Windows and Linux platforms. CIS has become the first ISP to offer VPS with local hosting in Pakistan. The CIS' data centre facilities were initially made available in Islamabad. In 2015, the services were expanded to Lahore and Karachi. The Lahore data centre is going to be linked with the Islamabad data centre as a backup or disaster-recovery site.



Data Centre of CIS

Software Development

CIS established an IT Software section in March 2015 for developing software applications and websites. The CIS' software team has expertise in Java, .Net and PHP platforms, and is also performing Search Engine Optimization (SEO), website audit and security related tasks. The software development projects that have been completed include administrative systems, management information systems, financial systems, helpdesks, purchasing, recruitment applications, attendance systems and numerous database applications. The section is also developing applications and websites for government, semi-government, NGOs and private-sector organizations.

COMSATS Science and Technology Park

COMSATS Internet Services is currently in the process of establishing a state-of-the-art Science and Technology Park. The new 5-storey building having a covered area of 45,000 sq. feet has been constructed, and the civil works of the building have been completed, while the interior work is in progress. This building will provide space for the Information Technology Research Centre (ITRC), Tele-health Resource Centre, expanded Data Centre, and Training Centre facilities offered by CIS. Two floors of the building are reserved for technology incubators, and research & development activities.

Tele-health Clinics

During 2015, Tele-health units were setup at Peshawar, Multan, Gwadar and Khairpur, and thus a network of 10 Tele-health units linked with CIS' Tele-health Resource Centre, Islamabad, is now





CIS' ComClinic setup at two locations in Pakistan

fully operational. Location of these clinics has been selected in consultation with the health departments of provincial governments. These clinics are located at different Basic Health Units (BHUs) in the country, including: Gokina & D-10 (Islamabad), Wahdat colony (Quetta), Dagai (Swabi), Sangu (Peshawar), Maraka (Lahore), Muzafarabad & Chak Faiz 5 (Multan), Shadoband (Gwadar), and Ubhri (Khairpur). This facility has been welcomed warmly by the people living in these underdeveloped remote areas of Pakistan. The CIS Tele-health network has served more than 30,500 patients and provided over 10,900 ultrasonographies by the end of 2015.

New Initiatives

Wireless for Community Programme in Pakistan

COMSATS Internet Services initiated its collaboration with the Internet Society (ISOC), Asia Pacific Bureau, in December 2015, in order to establish its flagship programme, 'Wireless for Communities (W4C) in Pakistan', by providing Internet access to under-served rural communities through WiFi-based technologies. The programme aims to create model communities to demonstrate that Internet can be effectively used for the development of society. The pilot project has already been initiated in the rural community of Chak Faiz, located near Multan city of Pakistan, where a network of more than 100 users, including students and teachers, has been successfully setup.



Representatives of CIS and ISOC after signing the MoU

L-Root Servers (Islamabad and Lahore)

COMSATS Internet Services under a joint venture with Internet Corporation for Assigned Names and Numbers (ICANN - the organization responsible for administering and coordinating the Domain Name System (DNS) worldwide), has deployed L-Root Mirror Server in the CIS Data Centres in Islamabad and Lahore. This allows the Internet users in Pakistan to experience reduced response times for DNS queries.

CIS: Some Information and Stats	
Core Services	Tornado® (Wireless broadband); Hawaii™ (Domain, hosting, and VPS); COMSpeed™ (Optical Fiber Connectivity)
Value-added Services	Hurricane™ (On-demand broadband), Prism™ (Website development), Viacon™ (Video conferencing); COM meeting™ (web Conferencing Service)
Training Courses offered	Cisco®, CCNA and CCNP, Linux Administration, Windows® Administration, Microsoft Office®, Oracle® database administration, Web development, Graphics design, and ITIL® V3 Foundation
Video-conferencing Centres	02 (Islamabad and Peshawar)
Data Centres	03 (Lahore, Karachi, and Islamabad)
Tele-health Units (ComClinic™)	10
Bandwidth growth	1441 Mbps (2015), 700 Mbps (2014)

Hosting of First RIPE Atlas Anchor in Pakistan

CIS is the first ISP in Pakistan to host the RIPE Atlas Anchor (Internet measurement server) sponsored by the Asia Pacific Network Information Centre (APNIC). This will facilitate CIS' customers and the Internet community in Pakistan in getting real-time measurement of Pakistan's Internet infrastructure within the country and outside. With RIPE Atlas Anchor, Internet users can measure latency from multiple locations, and investigate network glitches in real time.

DNSSEC Implementation

CIS implemented Domain Name System Security Extensions (DNSSEC) in Pakistan on 12 August 2015. The Domain Name System is the backbone of the modern Internet, and DNSSEC is a valued tool that supports the integrity of the DNS. The adoption of DNSSEC around the world is rapidly increasing as it has become fundamental to the development of a safe and reliable Internet. This is the result of CIS' research and development activities to help improve the DNS security of Internet users regionally and globally.

PKNIC Gold Channel Partner

CIS has become the first PKNIC Gold Channel Partner in Pakistan in December 2015 as part of their new class channel partner programme. PKNIC is responsible for the administration of .pk domain name, space registration of all .PK domain names, and operations of Root-Servers for .PK domains. The Gold Channel partnership allows CIS to offer its .PK domain customers some exclusive benefits, such as Gold Partner 20% discount, volume discounts, domain push, one-click hosting plans, and additional value-added services through uniquely tailored programmes.

COMSATS Internet Billing System (CIBS)

In order to offer its customers more convenience in paying their bills, CIS has upgraded the COMSATS Internet Billing System (CIBS) through the following



measures:

- Automation of invoices and follow up;
- Prevention of revenue loss through effective monitoring of receivables;
- Single control through centralized billing across the country;
- Timely billing, transparency and increased efficiency to raise the offered services;
- Installation of cluster-based servers at three different locations to ensure interruption free service to valued clients across the country.

To offer payment flexibility and ease of access to customers, CIS has collaborated with a local enterprise, Mobicash, in May 2015. Now the customers have the option of making payments through their mobile accounts at any of the 55,000 Mobicash outlets across Pakistan even during non-banking hours. CIS and Mobicash have also set-up a 24-hour helpline to assist customers with their queries.

Memberships/ Certifications

During 2015, CIS acquired a number of memberships and certifications that include the following:

- Registration with Pakistan Software Export Board (March 2015);
- ISO 27001:2013 Information Security Management System Certification of Data Centre (April 2015);
- Corporate Membership of Pakistan Software Houses Association (P@SHA);
- Membership of Pacific Telecommunications Council (PTC) (June 2015); and
- ISO 9001:2008 Certification for Quality Management System (October 2015).

Participation in Events

Pak-China Business Forum, Islamabad (27th to 30th March 2015): CIS set up its stall and exhibited its products and Tele-health facilities.

Startup Forum, Islamabad (9th May 2015): CIS participated in the event by setting up a stall. CIS presented awards to two fresh graduate entrepreneurs under the categories: 'Technopreneur of the Year 2015' and 'Service Business of the Year 2015'.

Pakistan School on Internet Governance (PkSIG), Islamabad (5th to 8th October 2015): CIS participated as the Domain service provider and highlighted the role of an ISP in Internet ecosystem.

Finances

CIS generated a revenue of PKR 195.582 million during the financial year of 2014-2015 with a net profit of PKR 21.713 million. Annual revenues generated during the financial year of 2013-2014 were PKR 186.824 million with a total profit of PKR 20.597 million.

Future Plans

CIS' plans for the coming year include:

- Launching of COMSATS Cloud™ (large storage area network); servers have already been installed in the Islamabad Data Centre;
- Data centre services to be launched in Faisalabad.

COMSATS Tele-Health Programme

COMSATS used its early adoption of Information Technology in the region as a competitive advantage to provide Tele-health services to the remote areas of Pakistan. The initiative that started as a pilot project in 2001, later became a flagship project of COMSATS, that not only provides tele-health services to a few communities in far-flung areas of Pakistan, but has also been successful in creating healthcare awareness. COMSATS has also been collaborating with a number of organizations for service delivery, raising awareness and advocacy for the acceptance of eHealth as a supporting mechanism to the conventional healthcare delivery system. Some activities under COMSATS Tele-health Programme during 2015 are as follows:

COMSATS-MALC Collaboration

Seeking new avenues for possible partnerships in tele-health in 2015, COMSATS initiated collaboration with Marie Adelaide Leprosy Centre (MALC), a Karachi-based NGO working for leprosy elimination, Tuberculosis (TB), and blindness control and community development for the last 56 years. In January 2015, COMSATS' Telehealth team comprising of Principal Medical Officer, Dr. Azeema Fareed, and Deputy Director (Systems), Mr. Nisar Ahmad, visited Karachi city of Pakistan to explore the possibility of facilitating MALC with tele-health activities. A meeting was held with MALC officials that included its Chief Executive Officer, Mervyn F. Lobo; Director, Training and Community Development, Dr. Ali Murtaza; Medical Director, Dr. Mutaher Zia; as well as the head of Information Technology section. COMSATS' officials also met Dr. Ruth Katharina Martha Pfau, who is the founder of MALC and a well-known name for leprosy control in Pakistan. Both the organizations mutually agreed to utilize Tele-health to support the ongoing activities of MALC. Avenues of cooperation to be explored in this regard include, establishment of new tele-health clinics for tele-consultations, and exploring potential of mobile health (mHealth) for awareness campaigns of MALC.



Glimpses of COMSATS' eHealth activities during 2015

In addition, COMSATS also collaborated with MALC Rawalpindi office to prepare a proposal, titled “Dial to Stop TB”, which aims to utilize mobile-based tools and provide the patients or suspected patients of Tuberculosis and their relatives access to information about the disease. The proposed mobile-based solution will allow MALC workers to reach out to the patients for further evaluation. A few meetings regarding this proposal were held at COMSATS Secretariat. The proposal is under process.

Activities as Member of eHealth Association of Pakistan (eHAP)

During 2015, COMSATS continued to participate in the activities of the eHealth Association of Pakistan (eHAP) through COMSATS’ Principal Medical Officer, Dr. Azeema Fareed, who holds the position of Joint Secretary eHAP. The activities included, Core Group Meetings held every month and Board Meetings held thrice a year conducted through video-conferencing. In January 2015, a special meeting (retreat) of eHAP Board members was held in Karachi to discuss in detail the success and failure of the Association over the years. During the meeting, COMSATS’ role was appreciated by the members for its continuous support to eHAP since the inception of the Association in 2009.

Other Activities

Other activities under COMSATS’ Tele-health Programme during 2015 included:

- Training of the new Medical Officer inducted for Community Health Centre, Zhob (the hub of COMSATS’ tele-health programme in the city) by the Human Development Foundation (HDF). The training session was held at COMSATS Telehealth Resource Centre during March 2015. The session included training on basic technique of Tele-health and use of COMSATS’ Patient Information web-portal for Tele-consultations.



Mr. Nisar Ahmad imparting training on Telehealth

- The Directorate of Science and Technology (DoST), Government of Khyber Pakhtunkhwa, under its project ‘Establishment of Design Facilitation and Training Centre’ called for identification and profiling of technical facilities in S&T organizations that could provide innovative technology-based solutions to be utilized for the socio-economic growth. COMSATS prepared a proposal of the required equipment and profile of its Tele-health Programme for registering itself with the project, and to later become affiliated as a Common Facility Centre (CFC) for eHealth. An encouraging response was received from DoST but unfortunately the project was discontinued due to time constraints and because the CFC enrollment could not be completed.

- COMSATS was also represented at an expert group meeting on eHealth, organized by Pakistan Institute of ICTs for Development (PIID), held on August 12, 2015, in Islamabad. The meeting was a part of a series of expert-group meetings held under the banner of e-Pakistan. The objective of the meeting was to discuss overall ecosystem of eHealth solutions in the country and provide framework for eHealth at strategic, policy & operational levels, by engaging the senior level policy-makers and implementers in health system in public & private sector organizations. The participants of the meeting included political, ehealth and medical experts from organizations including armed forces, medical colleges, etc. Two Pakistani Government officials, Senator, Mr. Mian Attique, and Chairperson Benazir Income Support Programme of Pakistan, Ms. Marvi Memon, jointly inaugurated the eHealth meeting. Three separate sessions were held on 'Global Best Practices and Achievements in eHealth'; 'Situation in Pakistan (Identify reasons of slow progress and Gap Analysis); and 'What is required to be done collectively to achieve desired results in Health through eHealth'.



Expert Group meeting organized by PIID, Islamabad

Web-portal

Improvements and changes in the COMSATS' eHealth web-portal (www.ehealthcomsats.com) continued throughout the year. The modifications included:

- Enhanced search algorithm of the completed visits;
- Rearrangement and modification of sitemap page contents;
- Creation of new accounts of doctors for inclusion in 'Doctor' panel; and
- Modification of the contents of 'Contact us'.

Moreover, technical assistance for using the portal was provided to group of specialists and doctors.

Future Plans

- COMSATS' Tele-health Programme is going to focus on its collaborations with MALC and a plan on how to proceed in this regard will be chalked out in a meeting planned for February 2016.
- Collaboration with COMSATS Internet Services on finding ways to jointly conduct activities in the field of eHealth in the future.



Islamic-World Science Net (IWSN) Web Portal

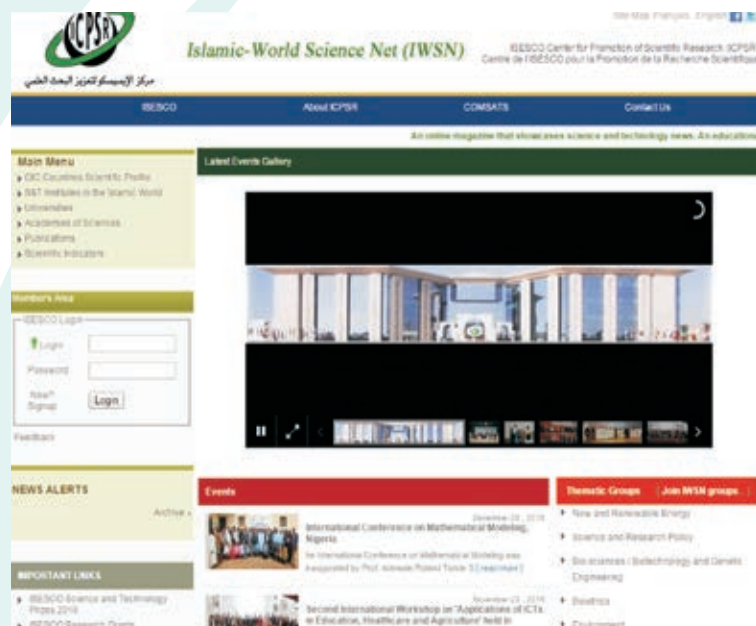
Islamic-World Science Net (IWSN) web portal was launched in 2007 jointly by ISESCO and COMSATS with an aim to facilitate and foster scientific and institutional networking for socio-economic development in Islamic Countries. Since its launching, COMSATS' dedicated team is constantly updating and maintaining the web-portal to serve the needs of networking of ever-increasing number of IWSN member scientists. Recently, the French version of IWSN has been developed and launched by COMSATS to serve the French-speaking communities of scientists/researchers.

IWSN provides a virtual forum for scientific researchers in 10 scientific thematic areas/disciplines to exchange information, share knowledge, address common concerns, and develop and supervise realistic programmes for achieving excellence in scientific research. At present, IWSN has 4,499 registered members in these virtual scientific thematic groups. The portal also provides a large volume of information data comprising profiles of 699 R&D institutions, 772 universities and 25 academies of sciences, as well as scientific profiles of 57 Member States of the Organization of Islamic Cooperation (OIC).

The 10 virtual scientific thematic groups on the web-portal are: New and Renewable Energy Group, Science and Research Policy Group, Bio-sciences / Biotechnology and Genetic Engineering Group, Bioethics group, Environment Group, Mathematics Group, Water Management Group, Nanotechnology Group, Science & Technology Park Management, and ICTs in Science and Technology Group.

The portal has successfully gained recognition among scientific community in Islamic countries, in particular, and in other countries, in general. The data collected through analytical tools shows very encouraging trends towards acceptability and popularity of the web-portal among scientists and students not only from the Islamic World but also from the developed countries. The Analytical Report for 2015 shows 64,500 visits from 185 countries/territories.

ISESCO showing trust on COMSATS' efforts has included cooperation for IWSN in its list of joint activities with COMSATS for 2016. The Action Plan for 2016 includes the development of Arabic version of the web-portal to facilitate the researchers/scientists from Arab Region.



COMSATS Graduate Scholarship Programme

During the annual meetings of its Coordinating Council, COMSATS encourages its Centres of Excellence and partner institutions to make scholarship offers to promising and outstanding scholars and researchers from COMSATS' Member States. In addition to the offers of trainings in various fields of specialization, the offers of scholarships and fellowships by the centres help the aspiring scientists and students acquire advanced education and undertake research in the fields of applied science and technology in a multicultural environment.

During the 18th Coordinating Council Meeting of COMSATS (May 2015), the Pro-Rector of COMSATS Institute of Information Technology (CIIT), Pakistan, reiterated the offer of postgraduate scholarships for studies in various disciplines at any of its seven campuses. Moreover, CIIT-Pakistan also offered five post-doctoral fellowships to researchers/scientists belonging to COMSATS' Member States. The announcement of the scholarship offer of CIIT is regularly circulated by COMSATS Secretariat to the Focal Points in its Member States. As a result, COMSATS Secretariat received 43 nominations for MS-studies (Fall 2016). Upon completion of the pre-requisites, the International Office of CIIT has requested Ghanaian Ministry of Environment, Science, Technology, and Innovation (MESTI) to issue No Objection Certificates (NOC) required by Higher Education Commission (HEC), Pakistan, for the eight eligible Ghanaian nominees of COMSATS Secretariat. These nominees have been found eligible for admission in MS under different departments of CIIT, including Biosciences, Environmental Sciences, Sustainable Water Sanitation & Development, and Remote Sensing & GIS. CIIT scholarship covers 100 % tuition fee; 50 % rebate on boarding/lodging cost; as well as upto 80 % waiver on admission and other fees. COMSATS Secretariat will provide travel grant to the eight Ghanaian students who will come to Pakistan to commence their studies in first half of 2016 at Islamabad and Abbottabad Campuses of CIIT.

In July 2015, seven Nigerian students who had been pursuing their MS studies at CIIT Islamabad Campus, have returned home and rejoined the National Mathematical Centre (NMC), Nigeria, after successful completion of their degrees.



Group photo of Nigerian students with Advisor (Programmes) of COMSATS Secretariat

COMSATS' Science Diplomacy Programme

COMSATS' Science Diplomacy Programme was launched on February 25, 2015, during a Round table Meeting held in Islamabad (details in Section 3). The programme aims at science popularization, advocacy and diplomacy to be achieved through various means. These include: COMSATS' Science Ambassador Scheme; a series of lectures on Science contributing to International Diplomacy; formation of a think tank; establishment of COMSATS Diplomacy Centre; organization of seminars and round table discussions for key stakeholders, as well as series of talks on scientific aspects of issues, such as biodiversity, water conversation, energy, climate change, and disarmament, etc.

Through the platform of the aforementioned Round table Meeting, the first batch of the designated COMSATS' Science Ambassadors were announced. The ambassadorship would be extended to other Member Countries in the future.

First Batch of COMSATS Science Ambassadors

**Science Ambassador
Emeritus - Science
Diplomacy**

*Dr. Imtihan Elahi Qureshi,
Executive Director COMSATS*



**Science Ambassador -
Biotechnology**

*Prof. Dr. Raheel Qamar,
Dean ORIC, CIIT, Pakistan*



**Science Ambassador -
Physics**

*Dr. Arshad Saleem Bhatti,
Head of Department, Physics,
and Dean Faculty of Science,
CIIT Pakistan*



**Science Ambassador -
Engineering and Technology**

*Dr. Muhammad Sabieh Anwar,
Associate Professor, LUMS,
Pakistan*



Science Ambassador - Energy

*Dr. Nasrullah Khan,
Professor, CIIT, Pakistan*



**Science Ambassador -
Climate Change**

*Dr. Athar Hussain,
Professor Department of
Meteorology, CIIT, Pakistan*



During 2015, efforts were made to organize various events under the programme in order to sensitize policy-makers about the centrality of science in international and national diplomacy. Following are brief reports of the activities held under COMSATS' Science Diplomacy Programme:

Initiation of Lecture Series on Science Diplomacy (16 June 2015)

As part of the programme, a COMSATS' Lecture Series in Science Diplomacy was initiated with its first lecture on 'UNFCCC, Kyoto Protocol and Beyond' delivered by the COMSATS' Science Ambassador on Climate Change, Prof. Dr. Athar Hussain, on June 16, 2015 (details in Section 3). The lecture was timed in order to sensitize Pakistan's policy-makers about the dynamics of climate change related international deliberations and discussions, in the wake of the then upcoming UN Climate Change Conference (COP21) and necessary groundwork required by Pakistan to negotiate an international agreement, in this regard.



Dr. Athar Hussain delivering expert lecture on UNFCCC

Strengthening of Collaboration with TWAS (16 June 2015)

Following the lecture a brief ceremony was held for signing of a Memorandum of Understanding (MoU) to formalize the cooperation between TWAS and COMSATS in the field of Science Diplomacy. The Executive Director COMSATS, Dr. I.E. Qureshi, signed the MoU on behalf of COMSATS, which was signed by the relevant official of TWAS on a later date. The areas of collaboration defined in the MoU include joint organization of lectures, workshops, conferences and seminars in Member States of COMSATS to create awareness about scientific background and solutions of issues affecting public policy and foreign relations. The two organizations would also exchange relevant intellectual resources, information, and data to help serve the purpose of the agreement.

Training of COMSATS' Official in Science Diplomacy (8-12 June 2015)

Mr. Abdul Majid Qureshi, Research Scholar COMSATS was nominated for training on the Summer Course in Science and Diplomacy, organized by AAAS and TWAS in Trieste, Italy, on June 8-12, 2015. Mr. Qureshi's participation was hosted by TWAS that was instrumental in developing capacity for COMSATS' Science Diplomacy initiative, and reinforces the long standing relationship between the two organizations that have also started collaborating in the area of Science Diplomacy.



Mr. A.M. Qureshi, Research Scholar COMSATS, receiving certificate of participation from the Executive Director TWAS

Organization of Discussion Forum in Connection with World Science Day for Peace and Development (10 November 2015)

A Discussion Forum on 'Science for a Sustainable Future' was organized on November 10, 2015, in partnership with the Pakistan Academy of Sciences, in order

to discuss a course of action towards improving the state of science in Pakistan. The World Science Day celebrations are part of COMSATS' efforts to sensitize the public about the importance of science and technology for solving pressing issues affecting human development in the South. As an advocate of judicious use of S&T for socio-economic development, COMSATS has organized various activities in order to promote awareness and application of new and emerging technologies on the occasion of the UN World Science Day for Peace and Development (WSDPD) and has taken measures to promote the reporting of such events in mass media.

In order to expand the Science Diplomacy Programme to other Member States, efforts were also made to apprise officials and scientists in Member States at various fora about the initiatives being undertaken by COMSATS on a continuous basis.



Participants of the Discussion Forum on Science for a Sustainable Future

9

PUBLICATIONS AND INFORMATION DISSEMINATION

- COMSATS Newsletter 168
- COMSATS' Journal, 'Science Vision' 171
- 3rd General Meeting Related Documentation 171
- AS-ICTP: 50 Years of Science for the Future - Views from Islamabad 173
- One Hundred Reasons to be a Scientist - (Urdu Version) 174
- COMSATS' Website and Other Informational Material 174
- Projection in the Print Media 175

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.

PUBLICATIONS AND INFORMATION DISSEMINATION

COMSATS Newsletter

COMSATS' bimonthly Newsletter has come a long way since its initiation in 2009, in terms of the quality and nature of its contents. Starting with an 8-page edition, the newsletter has had up to 28 pages over the years, which is also reflective of the increasing and diverse programmes and activities of COMSATS, as well as the varied interests and aspirations of different strata of its readership. The format and structure of the newsletter has been gradually expanded to include opinion articles, features, S&T indicators of Member States, profiles of Nobel Laureates from developing countries, apart from the standard sections, such as the activities of COMSATS Secretariat and affiliated Centres of Excellence. Some of COMSATS' international engagements and activities were given special coverage and space under the head 'Special Section', in order to address the informational needs of relevant stakeholders.



During the year 2015, the last issue of the sixth volume and five issues of the seventh volume of the newsletter highlighted COMSATS' activities for the corresponding periods undertaken in line with the organization's international programmes. The five issues of the seventh volume of COMSATS Newsletter consisted of 20, 20, 24, 16, and 28 pages, respectively. Volume six was completed earlier with its sixth issue comprising of 16 pages. Apart from the standard sections covering the activities of COMSATS Secretariat and Centres of Excellence, five comprehensive reports on the following were covered under the 'Special Section' of Volume 7: COMSATS Science Diplomacy Programme (Issue 1); Executive Director's Visits to

Jamaica and Kazakhstan (Issue 2); 18th Meeting of COMSATS Coordinating Council (Issue 3); Workshop on Repair and Maintenance of Scientific Equipment, Oman (Issue 4); and COMSATS' International Meetings in Ghana (Issue 5). While the sixth issue of volume six included a special section on COMSATS' three International Capacity-Building Events in Egypt, Morocco and Pakistan.

The Section on 'S&T Indicators of Member State' was maintained during 2015 to highlight the socio-economic and scientific standing of COMSATS' Member States, in the light of related development indicators from the World Bank and Human Development Reports. The volume six had closed with the profile of Tanzania under the section, while the five issues of the seventh volume covered Sri Lanka, Nigeria, Colombia, Uganda, and Zimbabwe. Moreover, under this section, interviews of Nigerian and Sri Lankan High Commissioners were also featured to highlight their Governments' stances on the role of S&T for development, and the efforts made by these countries in the past and their future plans to be executed in partnership with other developing countries, as well as with COMSATS.



A section title 'Opinion Article' was initiated for Volume 7, in which views and opinions on different topics were included from relevant experts. Articles published during the reporting period were:

- New Dimensions in Science Communication (Dr. Edward W. Lempinen, Public Information Officer TWAS, Trieste, Italy);
- ICTs for Sustainability, Climate Action and Development (Mr. Richard Labelle, Consultant and Analyst, ICT for Development (ICT4D), ICTs for Sustainability (ICT4S), Gatineau, Quebec, Canada);
- NGIs: Role of Individuals in Making Pakistan Science Conscious (Dr. Anwar Nasim, President, Pakistan Academy of Sciences, Islamabad, Pakistan);
- Celebrating International Year of Light and Light-based Technologies (Prof. Dr. Aslam Khan, Advisor (Physics), COMSATS Institute of Information Technology, Islamabad, Pakistan);
- Innovation is Essential for Competitiveness and Industrial Growth (Dr. S.T.K. Naim, Consultant, COMSTECH, Islamabad, Pakistan).

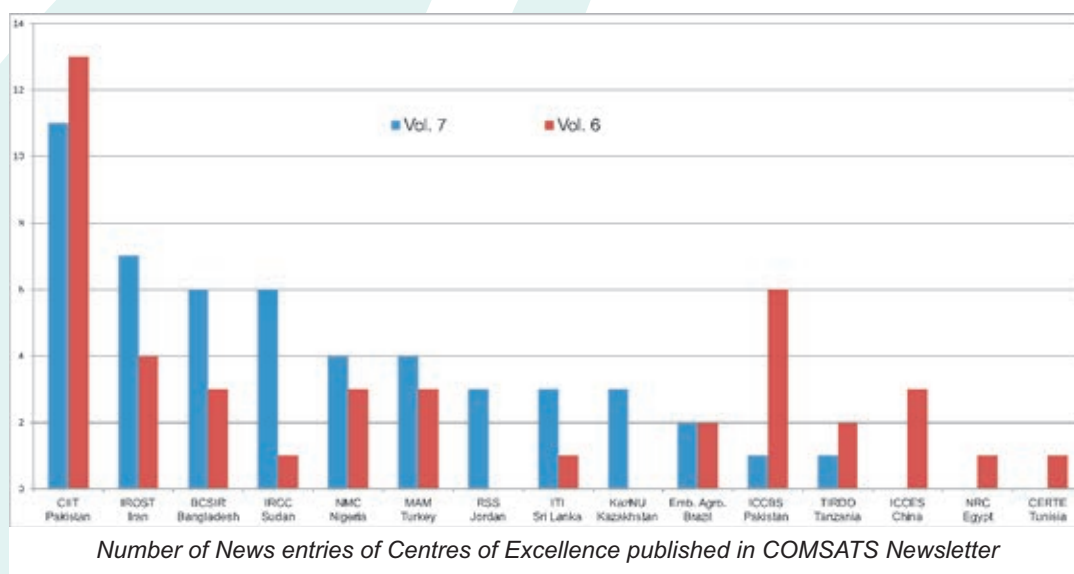
During 2015, profiles of the following five Heads of COMSATS' Centres of Excellence were prepared and given coverage in Volume 7:

- Dr. Maher Suleiman, Director Higher Institute for Applied Science and Technology (HIAST), Syria;
- Dr. Widad Abdel Halim Hassan, Director General, Industrial Research and Consultancy Centre (IRCC), Sudan;
- Dr. Victor Agyeman, Director General, Council for Scientific and Industrial Research (CSIR), Ghana;

- Dr. G. M. Mutanov, Rector, Al-Farabi Kazakh National University (KazNU), Kazakhstan; and
- Dr. Ibrahima Thioub, Rector/President of the Assembly of the University Cheikh Anta Diop of Dakar (UCAD), Senegal.

Profile of Prof. Mohamed Ben Youssef, Director General, Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia, had been covered in the last issue of the sixth volume.

Based on the inputs received from COMSATS' Centres of Excellence in response to the regular calls for content and follow-up made by COMSATS Secretariat, the section covering the Centres' activities continued during 2015. An encouraging trend was observed as the responses received for volume 7 (2015) have by and large increased in comparison with the previous volume.



The section on 'Science, Technology and Development' was maintained keeping in view the interest of scientists, researchers, and policy-makers. This section focuses on latest and important scientific findings in various fields of science and cutting-edge technologies from across the globe having potential to improve the socio-economic conditions of the developing world. The news covered in this section pertained to new scientific techniques and technologies that were cost-effective, efficient and revolutionary in nature. These included news on: bacteriophage therapy; 3D printed guides; out-of-the-lab immune therapy; novel anti-malarial compound; improvement in solar cells by using genetic engineering; heat-tolerant and productive wheat varieties; and plastic skin with sense for prosthetic limbs.

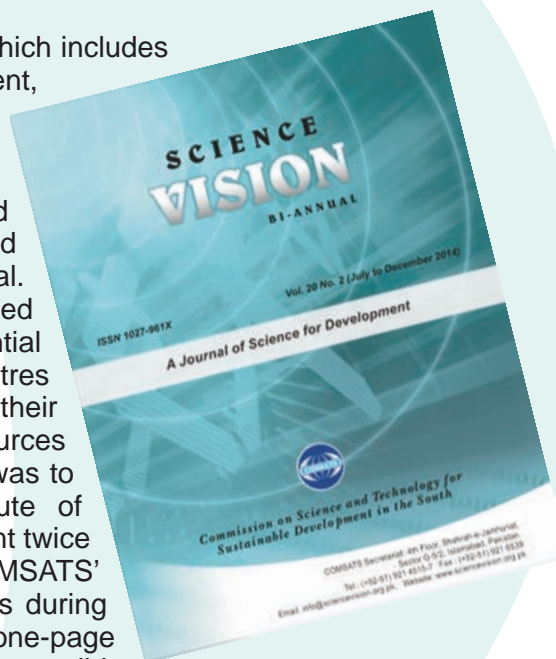
For due fulfillment of its objectives of information dissemination to stakeholders and their necessary sensitization, the newsletter was distributed widely in member countries, affiliated institutions, and partner organizations, as well as to the participants of COMSATS' capacity-building activities. Apart from the PDF versions available on COMSATS' website, the Newsletter is also distributed to its subscribers through free electronic subscription. A new provision of online feedback has also been created on COMSATS' website to invite objective inputs and comments from the

readership on different sections and layout of the newsletter.

COMSATS' Journal, 'Science Vision'

During 2015, the Vol. 20, No. 2 (June to December 2014) was finalized with 8 papers on the themes of environment, energy, health, agriculture, and aerodynamics. To observe 2014 as the 'International Year of Crystallography' (IYCr), this final issue of 2014 included a set of papers on crystallographic studies under the section 'Crystallographic Studies Marking IYCr 2014'. This section featured an introductory and three technical papers.

The work on the future issues is an ongoing activity, which includes issuing invitations for papers, in-house management, refereeing process as well as making necessary coordination with the authors and members of the Editorial Board. During 2015, efforts continued to invite papers for the journal through different media and means. Potential authors were constantly identified and approached to seek their scholarly inputs for the journal. The scope of the journal is established through the focused invitation letters/emails in order to align the potential contributions with the journal's scope. COMSATS' Centres of Excellence are periodically approached seeking their erudite contributions, based on their rich human resources and knowledge base. A specific effort, in this regard, was to engage the faculty members of COMSATS Institute of Information Technology (CIIT) through mass emails sent twice during the year. Regular announcements through COMSATS' publications, personal requests by COMSATS' officials during and after their international visits, and circulation of one-page announcement were a few other means by which possible intellectual resources were mobilized for the journal.



During 2015, a number of emails and letters were sent in addition to the announcements distributed during national and international events. These were extended to faculty members of universities of Pakistan, members of scientific societies, as well as participants of national/international scientific events. Regular calls for papers were also made through COMSATS Newsletter, which is circulated to over 500 recipients, mostly in scientific circles. Three hundred printed copies of the published issue of the journal were distributed among Heads of Centres of Excellence, representatives and members of various science academies, R&D organizations, and academic and scholarly circles from across the world. E-version of the issue was also made available on the journal's website (www.sciencevision.org.pk) on open-access basis.

3rd General Meeting Related Documentation

In view of the 3rd General Meeting of COMSATS and the 3rd Consultative Committee Meeting, scheduled for the later part of the year 2015, COMSATS Secretariat remained vigorously engaged in preparation of official meeting documents. For the 3rd General Meeting specifically, extensive efforts were made to finalize and bring out the





following main documents:

- i. Provisional Agenda and Programme, and Working Paper;
- ii. Overview of COMSATS' Activities and Future Plans: Executive Director's Report (2012-2015);
- iii. Overview of COMSATS' Network of International S&T Centres of Excellence;
- iv. Information Guide and S&T Panorama of Ghana.

The Agenda and Programme being the central document of the Meeting was prepared in view of the meeting objectives and the expected outcomes. The finalized document was composed, formatted and printed for distribution during the meeting.

The document, 'Overview of COMSATS' Activities and Future Plans: Executive Director's Report (2012-2015)', was an elaborate report prepared by the Secretariat covering the organization's activities for the period intervening the 2nd and 3rd General Meetings of COMSATS. Different activities of the organization were covered under the sections: Activities of Statutory Bodies; Financial Management; Scientific Activities in the Light of COMSATS Strategy (2012-16); Major Projects in Host Country; COMSATS' Publications and Information Dissemination; and New Initiatives and Future Plans. The information contained in these sections was accompanied with necessary facts, data and graphs.

The third document prepared was a handy compilation of the profiles of COMSATS' Centres of Excellence that succinctly highlight the potential and technical strengths of COMSATS' biggest technical resource, the Network of S&T Centres of Excellence. Apart from the brief profiles, the publication holds information on the human and technical resources available with the Centres and their areas of specialization; as well as commendations from the present and past Chairpersons of COMSATS Coordinating Council. The publication was finalized with due support and cooperation of the affiliated Centres.

As per the tradition set during the 2rd General Meeting (Islamabad, 2012), a document providing basic information about the host country and spectrum of its S&T activities was prepared for the 3rd General Meeting under the title, 'Information Guide and S&T Panorama of Ghana'. Contents of this succinct document were compiled and prepared by the Ghanaian Ministry of Environment, Science, Technology and Innovation (MESTI), covering various aspects of the country, such as its political history, demography and other useful information, as well as the science and technology infrastructure in the country and profiles of important scientific institutions. The Ministry shared its finalized document with COMSATS Secretariat that was printed after thorough in-house editing, composing and designing as per the template subscribed for the 3rd General Meeting documents.



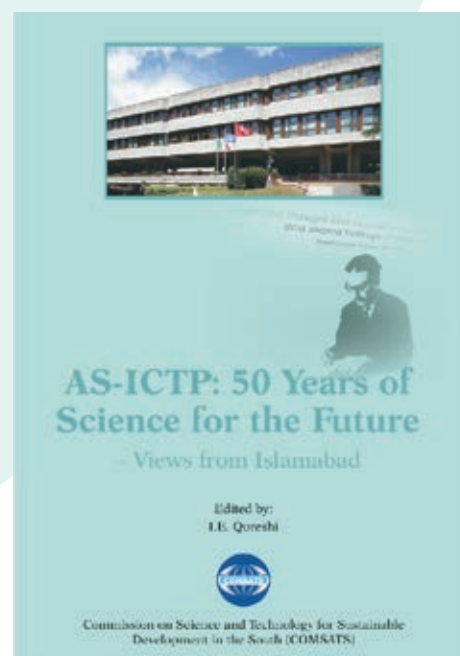
For a suitable post-event documentation, thematic covers for the documents approved by the Commission during the Meeting were also prepared including: Speeches, Rapporteur General's Report, Resolution, and Statutes.

COMSATS' one page flyer, titled 'COMSATS.... At a Glance', and COMSATS' Brochure, otherwise regularly revised were also updated and printed for the two Ghana Meetings. These were also included in the set of documents prepared for the Meetings.

AS-ICTP: 50 Years of Science for the Future - Views from Islamabad

COMSATS is an ardent supporter and promoter of important scientific initiatives and institutions. Publications are brought out from time-to-time to recognize and highlight the impact of such initiatives on the society. A publication entitled 'AS-ICTP: 50 Years of Science for the Future - Views from Islamabad' brought out during 2015 was a tribute to the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy.

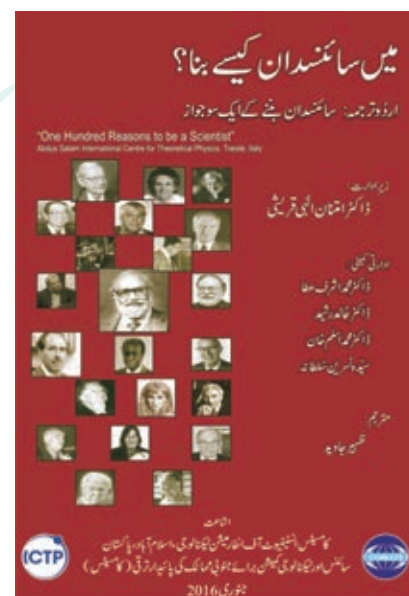
The publication predominantly covered the proceedings of a ceremony held at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan (October 2014), to mark the 50th Anniversary of AS-ICTP. The objective of the event was to highlight the significant role of ICTP in supporting scientists from the developing world. The publication covers talks by 13 Pakistani scientists who benefited from the international programmes of AS-ICTP over the years; a Preface by the Director of AS-ICTP; a chronology of events and profiles of the past and incumbent Directors of AS-ICTP; AS-ICTP related excerpts of Prof. Abdus Salam in support of the establishment of the Centre and its role; as well as pictorial projections of ceremonies held in connection with 50th Anniversary of ICTP held in Italy and Islamabad. Later, over 200 copies of the book were distributed among COMSATS' focal ministries in Member States; COMSATS Centres of Excellence; contributing authors; COMSATS Technical Advisory Committee; diplomatic community in Islamabad, partner international organizations, UN agencies and S&T institutions; selected universities, libraries and members of the scientific community in Pakistan. The publication was made available on COMSATS' official website (www.comsats.org).



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

Urdu translation of the book titled 'One Hundred Reasons to be a Scientist', published in 2004 by Abdus Salam International Centre for Theoretical Physics (AS-ICTP), was completed in 2015. The task was achieved with inputs from a panel of 20 subject specialists who worked on the book for about four years. In particular, the Executive Director COMSATS played an important role as the Editor, overseeing translation and proof-checking of the manuscripts to ensure accuracy. All the translated 91 chapters of the book have been made available on COMSATS' website.

The first batch of translated chapters of the book was launched during a ceremony held in Islamabad to mark 50th Anniversary of AS-ICTP at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan.



COMSATS' Website and Other Informational Material

In an effort to provide correct and up-to-date information, COMSATS' official website is kept updated throughout the year. Apart from regular updating with regard to announcements, informational material, and contact information, news reports on various COMSATS' events were added for quick information-sharing.

At the turn of the year 2015, the website was revamped as has been the practice during the recent years. The website, with updated content, new features and navigation options, offers an easy flow of information. Major revisions on the website included:





- Re-arrangement of the contents of the website based on COMSATS' Statutes approved during the 3rd General Meeting;
- Introduction of new tabs for content added in the light of the 3rd General Meeting: General Meeting, Statutes, Strategy Document, Endowment Fund, and Science Diplomacy;
- Restructuring of the existing contents and creating relevant tabs and drop-down menus.

PDF versions of COMSATS' publications are uploaded on COMSATS' official website for free and unrestricted information dissemination, and the website visitors can also submit prompt online feedback on some publications through necessary provisions created for the purpose.

Projection in Print Media

For an organization working for the advocacy of S&T-led solutions for development, the widespread projection of COMSATS' events and activities in print and electronic media is pivotal. It helps spread awareness as well as bring recognition for COMSATS' mandate and support for its programmes and activities from the relevant stakeholders.

In its efforts to optimize the impact of COMSATS' international engagements and activities, the Secretariat regularly issued pre- and post-event press releases, announcements, and summaries to print and electronic media. In addition to the pre-meeting informational material and announcements, press releases of the COMSATS' capacity-building activities were released and followed up with media circles for suitable coverage.

A major activity, in this regard, was a full page supplement published in a Ghana's newspaper, The Ghanaian Times, on the occasion of the 3rd General Meeting of COMSATS held in Accra (October 2015). This special newspaper supplement was published in coordination with the Ministry of Environment, Science, Technology and

Innovation (MESTI), and covered messages from the Chairperson of COMSATS and President of the Republic of Ghana, H.E. John Dramani Mahama; Minister for Environment, Science, Technology and Innovation, H.E. Mahama Ayariga; Chairperson of COMSATS Consultative Committee, Mr. Fazal Abbas Maken; Chairperson of COMSATS Coordinating Council, Dr. Eduardo Posada Florez; and Executive Director COMSATS, Dr. Imtihan Elahi Qureshi.

An article projecting COMSATS' international role for sustainable development and its S&T-led activities in Member States was a prominent part of this supplement.



The Third Commission Meeting of COMSATS

Commission on Science and Technology for Sustainable Development in the South

27-28 October 2015, Accra, Ghana



Hosted by: Ministry of Environment, Science, Technology and Innovation, Ghana, and Commission on Science and Technology for Sustainable Development in the South

M E S S A G E S



H.E. JOHN DRAMANI MAHAMA
President of the Republic of Ghana

The Government of Ghana is pleased to host the 3rd Commission Meeting of the Commission on Science and Technology for Sustainable Development in the South (COMSATS). The meeting is a significant event in the history of COMSATS, which was established in 1995 to promote science, technology and innovation (STI) in the South. The meeting will provide an opportunity for Member States to discuss the progress of COMSATS and to identify areas for further cooperation.



H.E. MAHAMA AYARIGA
Minister for Environment, Science, Technology and Innovation

The Ministry of Environment, Science, Technology and Innovation is pleased to host the 3rd Commission Meeting of COMSATS. The meeting is a significant event in the history of COMSATS, which was established in 1995 to promote science, technology and innovation (STI) in the South. The meeting will provide an opportunity for Member States to discuss the progress of COMSATS and to identify areas for further cooperation.



MR. FAZAL ABBAS MAKEN
Chairperson Consultative Committee

The Consultative Committee is pleased to host the 3rd Commission Meeting of COMSATS. The meeting is a significant event in the history of COMSATS, which was established in 1995 to promote science, technology and innovation (STI) in the South. The meeting will provide an opportunity for Member States to discuss the progress of COMSATS and to identify areas for further cooperation.



DR. EDUARDO POSADA FLOREZ
Chairperson Coordinating Council

The Coordinating Council is pleased to host the 3rd Commission Meeting of COMSATS. The meeting is a significant event in the history of COMSATS, which was established in 1995 to promote science, technology and innovation (STI) in the South. The meeting will provide an opportunity for Member States to discuss the progress of COMSATS and to identify areas for further cooperation.



DR. IMTIHAN ELAHI QURESHI
Executive Director COMSATS

The Executive Director is pleased to host the 3rd Commission Meeting of COMSATS. The meeting is a significant event in the history of COMSATS, which was established in 1995 to promote science, technology and innovation (STI) in the South. The meeting will provide an opportunity for Member States to discuss the progress of COMSATS and to identify areas for further cooperation.






COMSATS

gratefully acknowledges the support of the Government of Ghana for holding the 3rd Commission Meeting and welcomes the delegates of Member Countries

Paving the Way for Sustainable Development through:

- Promotion of Science, Technology and Innovation as a means to fast track socio-economic developments;
- Mobilization of scientific and technological resources through South-South cooperation;
- Capacity building of Member States through a Network of S&T Centres of Excellence.




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

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- Contributions of Member States 178

Since the inception of the organization, COMSATS Secretariat's Finance and Accounts Department has been managing its financial activities, which include 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.

FINANCIAL AFFAIRS OF COMSATS

Accounts and Audit

The accounts of COMSATS Secretariat are maintained as per the International Accounting & Financial Standards. The fiscal year of COMSATS Secretariat begins from July 1 and ends on June 30 of the succeeding year. After closing of the accounts on 30th June every year, COMSATS gets its accounts audited by a reputed chartered accountancy firm. The audited accounts, along with Auditors' Report, are submitted to COMSATS' Management Committee for endorsement and the Coordinating Council for approval.

M/s. M. Yousuf Adil Saleem & Co., Chartered Accountants, conducted audit of accounts of COMSATS Secretariat for the financial year ended on June 30, 2014. The Auditors' Report and Audited Financial Statements of COMSATS Secretariat for the financial year commencing from July 1, 2013 and ending on June 30, 2014, are given in this report.

Contributions of Member States

The voluntary contributions of Member States towards COMSATS are kept as a trust fund and are spent to support the technical activities and programmes of COMSATS related to the contributing country.

During the year 2015, COMSATS received Annual Membership Contributions (AMC) from three Member States, Pakistan (in Pak Rupees equivalent to US\$ 20,000/-), China (US\$ 20,000/-) and Jamaica (US\$ 20,000/-). In addition to the AMC, the Government of Pakistan also contributes PKR 40 million (~US\$ 400,000) per annum towards the running costs of COMSATS Secretariat based in Islamabad, Pakistan.

AUDITORS' REPORT TO THE COORDINATING COUNCIL

We have audited the annexed balance sheet of the Commission on Science and Technology for Sustainable Development in the South (COMSATS) Secretariat ("the Secretariat") as at June 30, 2014 and the related income and expenditure account, cash flow statement and statement of changes in funds together with the notes forming part thereof, for the year then ended and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit.

It is the responsibility of the Secretariat's management to establish and maintain a system of internal control, and prepare and present the above said statements in conformity with the approved Accounting and Financial Reporting standards for Medium-Sized Entities (MSE) issued by the Institute of Chartered Accountants of Pakistan. Our responsibility is to express an opinion on these statements based on our audit.


We conducted our audit in accordance with the international auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said statements are free of any material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the above said statements. An audit also include assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said statements. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

- (a) in our opinion, proper books of account have been kept by the Secretariat;
- (b) in our opinion-
 - (i) the balance sheet and income and expenditure account together with the notes thereon have been drawn up in conformity with the Accounting and Financial Reporting Standards for Medium-Sized Entities (MSEs) issued by the Institute of Chartered Accountants of Pakistan, and are in agreement with the books of account and are further in accordance with accounting policies consistently applied;
 - (ii) the expenditure incurred during the year was for the purpose of the Secretariat's business; and
 - (iii) the operations conducted, investments made and the expenditure incurred during the year were in accordance with the objects of the Secretariat.

Deloitte.

M. Yousuf Adil Saleem & Co.
Chartered Accountants

- (c) in our opinion and to the best of our information and according to the explanations given to us, the balance sheet, income and expenditure account, cash flow statement and statement of changes in funds together with the notes forming part thereof conform with approved accounting standards as applicable in Pakistan, and, give the information required by the Accounting and Financial Reporting Standards for Medium-Sized Entities (MSEs) issued by the Institute of Chartered Accountants of Pakistan, in the manner so required and respectively give a true and fair view of the state of the Secretariat's affairs as at June 30, 2014 and of the deficit, its cash flows and changes in funds for the year then ended.
- (d) in our opinion no Zakat was deductible at source under the Zakat and Ushr Ordinance, 1980 (XVIII of 1980).



Chartered Accountants
Audit Engagement Partner: Mohammad Saleem

Islamabad

Dated: 02 DEC 2014

Member of
Deloitte Touche Tohmatsu Limited



**COMMISSION ON SCIENCE AND TECHNOLOGY FOR
SUSTAINABLE DEVELOPMENT IN THE SOUTH (COMSATS) SECRETARIAT
BALANCE SHEET
AS AT JUNE 30, 2014**

		2014	2013
	Note	(Rupees)	
NON-CURRENT ASSETS			
Property and equipment	4	33,286,217	26,123,576
Investment property	5	867,734	913,404
Investment in Joint Venture	6	531,224	591,215
Long term loan	7	56,010,557	59,586,249
Long-term security deposits		600,851	586,460
		91,296,583	87,800,904
CURRENT ASSETS			
Advances and prepayments	8	4,445,759	2,613,125
Short-term investments	9	34,735,929	30,359,347
Current portion of long term loan	7	1,800,000	1,500,000
Other receivables	10	4,350,860	4,558,006
Cash and bank balances	11	30,448,643	38,256,876
		75,781,191	77,287,354
TOTAL ASSETS		167,077,774	165,088,258
FUNDS AND RESERVES			
Technical assistance fund	12	32,000,000	32,000,000
Accumulated surplus		83,145,479	84,469,271
		115,145,479	116,469,271
NON-CURRENT LIABILITIES			
Deferred grants	13	33,785,687	35,395,723
Deferred liabilities	14	13,335,383	9,770,023
		47,121,070	45,165,746
CURRENT LIABILITIES			
Creditors, accrued and other liabilities	15	4,811,225	3,453,241
		4,811,225	3,453,241
TOTAL FUNDS AND LIABILITIES		167,077,774	165,088,258
CONTINGENCIES AND COMMITMENTS	16		

The annexed notes from 1 to 22 form an integral part of these financial statements.

DEPUTY DIRECTOR (F&A)

EXECUTIVE DIRECTOR



COMMISSION ON SCIENCE AND TECHNOLOGY FOR
SUSTAINABLE DEVELOPMENT IN THE SOUTH (COMSATS) SECRETARIAT
INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED JUNE 30, 2014

	Note	2014 (Rupees)	2013
INCOME			
Grant income	17	40,675,450	40,711,000
Other income	18	14,659,713	17,707,885
		<u>55,335,163</u>	<u>58,418,885</u>
EXPENDITURE			
Administrative expenses	19	56,636,960	47,728,504
Finance cost		21,995	28,973
		<u>56,658,955</u>	<u>47,757,477</u>
(DEFICIT) / SURPLUS FOR THE YEAR		<u>(1,323,792)</u>	<u>10,661,408</u>

The annexed notes from 1 to 22 form an integral part of these financial statements.



DEPUTY DIRECTOR (F&A)



EXECUTIVE DIRECTOR

EDITOR-IN-CHIEF

Dr. Imtinan Elahi Qureshi
Executive Director COMSATS

EDITORS

Mr. Irfan Hayee
Ms. Farhana Saleem

DESIGNED BY

Mr. Imran Chaudhry





Annual Report

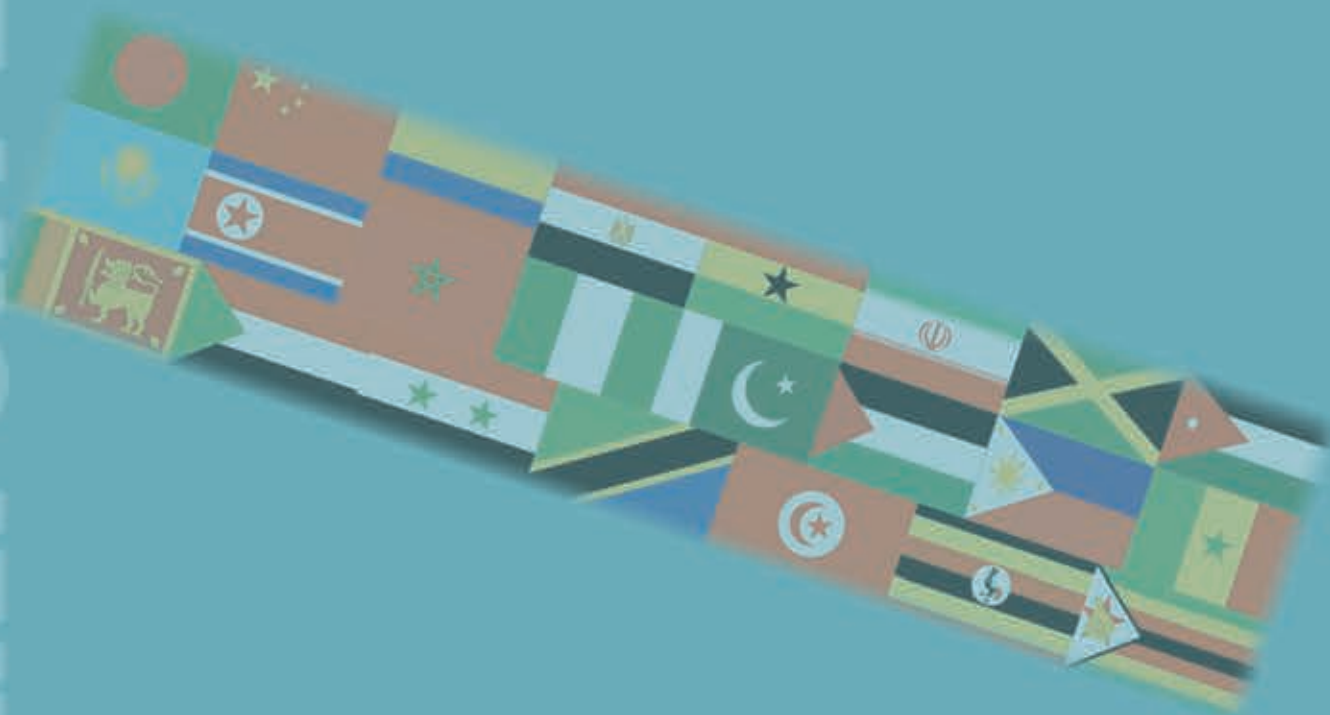
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LIST OF MEMBERS OF COMSATS' NETWORK OF INTERNATIONAL S&T CENTRES OF EXCELLENCE

- Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh
- EMBRAPA Agrobiologia, Brazil
- International Center for Climate & Environment Sciences (ICCES), China
- Centro Internacional de Física (CIF), Colombia
- National Research Centre (NRC), Egypt
- Council for Scientific and Industrial Research (CSIR), Ghana
- Iranian Research Organization for Science and Technology (IROST), Iran
- International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica
- Royal Scientific Society (RSS), Jordan
- Al-Farabi Kazakh National University (KazNU)
- National Mathematical Centre (NMC), Nigeria
- COMSATS Institute of Information Technology (CIIT), Pakistan
- International Center for Chemical and Biological Sciences (ICCBS), Pakistan
- Université Cheikh Anta Diop (UCAD), Senegal
- Industrial Technology Institute (ITI), Sri Lanka
- Industrial Research and Consultancy Centre (IRCC), Sudan
- Higher Institute for Applied Sciences and Technology (HIAST), Syria
- Tanzania Industrial Research and Development Organization (TIRDO), Tanzania
- Water Research and Technologies Centre (CERTE), Tunisia
- TÜBİTAK Marmara Research Center (MAM), Turkey

ANNUAL REPORT 2015



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