COMSATS

ANNUAL REPORT 2013

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

Organogram

CHAIRPERSON
(President of the Republic of Ghana)

COMMISSION
(Heads of Member States/Governments)

EXECUTIVE DIRECTOR

International Network of Science and Technology Centres of Excellence:
- Consultative Committee
- Coordinating Council
- Technical Advisory Committee

Board of Management-COMSATS Internet Services (CIS)

COMSATS Secretariat / Headquarters

COMSATS Management Committee

Board of Governors-COMSATS Institute of Information Technology (CIIT)

March 2014

ANNUAL REPORT 2013

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 for sustainable socio-economic uplift of the developing countries through the applications of science and technology. COMSATS' current membership includes 21 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. 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 each other 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 envisioned in the Foundation Agreement are:

- To sensitize the countries of the South to the centrality of science and technology in the development process, to the adequate allocation of resources 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 under this agreement;
- To support other major initiatives designed to promote indigenous capacity-building in science and technology for science-led sustainable development, and to help mobilize long-term financial support from international donor agencies and from governments / 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; and
- To support the relevant programmes and initiatives of major international organizations working for the development and promotion of science and technology in the South.

COMSATS MEMBER COUNTRIES


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


Federal Republic of Nigeria


Islamic Republic of Pakistan


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

TABLE OF CONTENTS

	Foreword	v
	Letter from the Chairperson Consultative Committee	vii
	Letter from the Chairperson Coordinating Council	ix
1	ACTIVITIES OF COMSATS ORGANIZATIONAL BODIES	01
2	ACTIVITIES OF COMSATS SECRETARIAT	13
3	SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS SUPPORT	21
4	ACTIVITIES OF COMSATS INTERNATIONAL THEMATIC RESEARCH GROUPS	41
5	COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS	51
6	INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS	57
7	OTHER IMPORTANT MEETINGS	73
8	AN OVERVIEW OF MAJOR ACTIVITIES AND ACHIEVEMENTS OF COMSATS CENTRES OF EXCELLENCE	83
9	REPORTS OF SPECIAL ASSIGNMENTS	105
10	PUBLICATIONS AND INFORMATION DISSEMINATION	117
11	FINANCIAL AFFAIRS OF COMSATS	125

FOREWORD

COMSATS is a voluntary inter-governmental organization with a very clear and well-defined focus; namely, building S&T capacity in the developing countries through South-South as well as North-South cooperation. This annual report portrays all facets of COMSATS engagements with its 21 Member Countries during the course of the last calendar year. In general, the activities of COMSATS are geared towards its main objectives as outlined in the international Agreement to Establish COMSATS signed by founding Member Countries in 1994.

To start with, there is always a need to re-emphasize how important the development of S&T sector is in overall progress of a country. That requires a conscious policy decision at State level to make financial investments, which bring dividends only on a long time-scale. Often due to the myriad exigencies that emerge under socio-political framework of developing countries, it is not always possible to allocate financial resources for anything other than meeting short-term requirements. Therefore, in spite of being convinced that building S&T manpower and infrastructure is essential for economic development, the political leadership is unable to make commensurate financial provisions. COMSATS, along with various other international forums, has been advocating the need for greater expenditures on R&D in order to strengthen S&T capacity of developing countries. The communiqués issued by COMSATS Coordinating Council, which are widely distributed among policy-makers in the Member Countries, always stress the need to strive for achieving the target of 2% of GDP as Gross Expenditure on Research and Development. These appeals serve as part of COMSATS efforts towards its mandate of science advocacy.

The second fundamental requirement is the judicious and effective utilization of available resources. The top priority, in this respect, naturally is the S&T education. In spite of financial constraints, COMSATS has made arrangements for a limited number of students from its Member Countries to undertake graduate level studies at COMSATS Institute of Information Technology (CIIT) in Pakistan. Several Nigerian students availed this opportunity in 2013 to enroll for graduate level studies at the Institute. The teaching and research resources available at CIIT, having over 2,700 faculty members, is a unique feature of COMSATS. Being one of the Centres of Excellence, the activities of the Institute are reflected in this report along with other Centres.

The Network of eighteen Centres of Excellence, spread over four continents, is another unique strength of COMSATS, which facilitates interaction among scientific leadership of Member Countries through annual meetings of COMSATS Coordinating Council. Along with the deliberations of the Council, other meetings of COMSATS statutory bodies are a permanent feature of the organization s annual reports. Using the resources available in its Network, COMSATS launched an ambitious scheme in 2010, to conduct basic research under a format dubbed as International Thematic Research Groups . Each Group s research work is undertaken by the group members distributed in

different countries under the guidance of a Group Leader from within the Network, on a topic that is mutually agreed by COMSATS and the Group Leader. The progress of these Groups is also highlighted in this report, along with the status of new initiatives concerning Science Policy and Distinguished Professorship.

The conventional activities of COMSATS relate to the organization of conferences, symposia and workshops for capacity-building of research scientists. Three important features of these programmes are worth mentioning. The first is the choice of the topic, which is always related to the pressing needs of the developing countries. Secondly, preference is given to hands on training programmes, such as workshops on Repair and Maintenance of Scientific Equipment and Internet Security . Thirdly, COMSATS always invites other international organizations to become administrative partners in order to share costs and expand participation. A number of events included in this report are the result of COMSATS-ISESCO collaboration.

COMSATS has always maintained a policy of acting synergistically with other international bodies having common mandates. In the past, overtures were made on several occasions to seek partnership of UNESCO as an IGO, while joint activities were undertaken with the assistance of Pakistan National Commission for UNESCO. The contacts between UNESCO and COMSATS were strengthened during the visit of Executive Director COMSATS to Paris and meetings with high officials of UNESCO during its 37th session of General Conference, held in November 2013. A formal proposal for UNESCO-COMSATS cooperation agreement is under review at UNESCO.

Under the directions of COMSATS Coordinating Council, the Executive Director is also obliged to visit Member Countries and discuss avenues of international cooperation, as well as to other countries in connection with enhancing COMSATS and its Network s membership. The visit to Tunisia in this connection would hopefully lead to the affiliation of a Tunisian R&D organization as Centre of Excellence of COMSATS.

The outreach of COMSATS is greatly enhanced by its highly efficient publications team, which performs multiple functions; such as, updating COMSATS web-site on almost daily basis, bringing out bi-monthly Newsletter, publishing the organization s bi-annual journal, Science Vision , and the preparation of Annual Reports. Apart from these periodical publications, there are a number of other documents that fall under the responsibility of the publications department. These include publishing of the profiles of Centres of Excellence in partnership with The World Academy of Science (TWAS); proceedings of selected scientific symposia organized in different countries with the organizational support of COMSATS; as well as information material relevant to COMSATS itself.

The present report is a collage of COMSATS assorted activities, which hopefully reflect the image of an efficient and vibrant organization. These activities and their reporting would not have been possible without cooperation of COMSATS stake-holders in Member Countries and its Secretariat staff at Headquarters. The combined efforts of all concerned for organizing COMSATS activities and their reporting through various media, including this Annual Report, are highly commendable.

Dr. Imtinan Elahi Qureshi
Executive Director COMSATS

LETTER FROM THE CHAIRPERSON CONSULTATIVE COMMITTEE

Developing countries in general are faced with multifaceted challenges at national, regional and international levels. To some, poverty, illiteracy, hunger and healthcare are the core areas of national concern, while for others with better economic standings, factors like GDP growth rate, trade balance, gender main-streaming, and industrial and energy production are priorities for competing at regional level. On the global front, all the countries are yet to adopt ways to mitigate the common challenge of climate change. Science and Technology has proved to be the mainstay for meeting the challenges humanity has been facing, be it for combating epidemics; ensuring food security through increased agri-yield; creating means for increased education access for masses; enhancing industrial production; or understanding the underlying causes of climate change.

COMSATS, I believe is performing well in facilitating S&T cooperation among the resource-challenged developing countries, especially through its Network of S&T Centers of Excellence and the International Thematic Research Groups, which are tailor-made to meet the needs of COMSATS' Member States. Having an insight of the national S&T standings of its member countries, a resource pool of scientists and scholars, and various high-profile statutory bodies and technical groups, COMSATS is well-placed for providing technical consultations on national S&T plans and policies to its Member States. COMSATS' contribution in formulating its host country's National Science, Technology and Innovation Policy is a testimony to this effect.

The programmes and projects of COMSATS, implemented since its inception in 1994, have been beneficial to its Member States in many ways and hold a promise of many strategic advantages in the future. As Chairperson of COMSATS Consultative Committee, I am convinced that COMSATS is set to play an even bigger role for the national development of its Member States. The activities reported in this annual publication of COMSATS give a reflection of how the mechanism of South-South cooperation can be effectively used for sharing the benefits of science and technology; building national scientific capacities; conducting joint thematic research for development; as well as galvanizing a culture of science through scientific publications and information dissemination.

The Ministry of Science and Technology, Government of Pakistan, cherishes cordial working relations with COMSATS, which has been its trustworthy partner since long. COMSATS' support renders a degree of assurance to the success of the Ministry's initiatives. From the platform of COMSATS Consultative Committee, I take this opportunity to request my counterparts and colleagues in the Member States to make full use of the scientific and technical expertise available with the organization, and to actively participate in its international programmes and activities. I also wish COMSATS a successful year ahead.

Mr. Kamran Ali Qureshi
Chairperson COMSATS Consultative Committee &
Federal Secretary
Ministry of Science and Technology
Government of Pakistan

LETTER FROM THE CHAIRPERSON COORDINATING COUNCIL

I wish to express my deepest gratitude to Ghana's Ministry of Environment, Science Technology and Innovation for its support to the 16th Meeting of COMSATS Coordinating Council, held in Accra, in May 2013, together with the 2nd meeting of the Consultative Committee of COMSATS. The wonderful hospitality and the great work done by the Council for Scientific and Industrial Research (CSIR) of Ghana for the organization of the two events were the key factors for their success.

Once more, the strength of COMSATS and its increasing influence as one of the leading scientific institutions of the third world became clear from the excellent reports presented by the Headquarters and by the Council members from the Centers of Excellence.

At the meeting in Accra, a summary of the campaign aimed at increasing the number of Member States and to strengthen the Network of S&T Centres of Excellence was presented along with a detailed description of the many symposia and workshops organized by the Secretariat in different member countries. This remarkable activity is a clear example of the very efficient work done under the competent direction of Dr. Imtinan Elahi Qureshi and his team in Islamabad.

The activities presented by the leaders of International Thematic Research Groups showed the importance of promoting joint research activities in fields that are strategic for the future of our planet.

As one of my personal observations from the Council meetings, I wish to mention the role that COMSATS can play in promoting the establishment of strong cooperation between Africa and Latin America, which are today the continents with the fastest growing economies in the world. Examples of this cooperation are the programmes that EMBRAPA Agrobiologia, the Brazilian member of COMSATS Network, is carrying out in the field of agriculture with several African countries, particularly Ghana. It can be interesting to extend this type of activity to other scientific fields.

I also want to stress the importance of the international visits that the Executive Director has undertaken and the contacts established with international organizations. This particular activity is essential in order to promote our organization and to find ways to raise additional funds for our programmes.

Finally, we are grateful to the Iranian Research Organization for Science and Technology (IROST), for its invitation and hosting the next Coordinating Council

Meeting in Tehran, which, I am confident, will be a great success.

Dr. Eduardo Posada Flórez
Chairperson COMSATS Coordinating Council &
Director International Centre
for Physics (CIF), Colombia

1

ACTIVITIES OF COMSATS ORGANIZATIONAL BODIES

- 2nd Consultative Committee and 16th Coordinating Council Meetings 02
- 33rd and 34th Meetings of COMSATS Management Committee 10

The Consultative Committee comprises of 21 national scientific Focal Points of COMSATS Member countries. The Committee, inter alia, coordinates matters relating to: formulation of general policy of the Network; upgradation of Member countries institutions so as to help them achieve full member status of the Network; sensitization of the Network towards the specific requirements of member countries; and fund raising for the Centres at national, regional and international levels.

The Coordinating Council of COMSATS comprises the Heads of its 18 International S&T Centres of Excellence. The Council meets once annually to take decisions 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.

2ND CONSULTATIVE COMMITTEE AND 16TH COORDINATING COUNCIL MEETINGS

Introduction

The meetings of COMSATS statutory bodies play a pivotal role in evaluating the performance of the organization and setting directions for its future activities in pursuit of its mission of science-led socio-economic development. From 1st to 3rd May 2013, two such meetings were held in Ghana, whereby the COMSATS Coordinating Council and Consultative Committee separately deliberated on specific agendas during their 16th and 2nd sessions, respectively.

These meetings were hosted by COMSATS Ghanaian Focal Point, the Ministry of Environment, Science, Technology and Innovation (MESTI), and the Centre of Excellence in the country, the Council for Scientific and Industrial Research (CSIR). In addition to the members or representatives of the two statutory bodies, officials of TWAS and UNESCO, Prof. Keto Elitabu Mshigeni, Vice-President for Africa, TWAS, and Dr. Yoslan Nur, Programme Specialist at UNESCO, respectively, attended the meetings as observers. Also present in the meeting, in his capacity as one of the members of Technical Advisory Committee (TAC), was Dr. Jean-Pierre Revol, Senior Physicist at CERN.

As per practice, the relevant Ministries of the host country, Ministry of Science and Technology and Ministry of Foreign Affairs of Pakistan, as well as diplomatic missions of the Member States in Islamabad, were sensitized earlier about the Ghana meetings. In this regard, meetings were held with high officials of Government of Pakistan and a dinner was hosted in honour of the Ambassadors of COMSATS Member States in Islamabad.

Joint Inaugural Ceremony

The two COMSATS meetings were jointly inaugurated on the morning of May 1, 2013, in Accra, Ghana. The inaugural ceremony was attended by representatives of universities and R&D institutions, and senior officials of diplomatic community in the city, as well as the participants of the two meetings.

The ceremony featured a Welcome Speech by Dr. A. B. Salifu, Chairperson CSIR, Ghana; Introductory Remarks by Dr. I.E. Qureshi, Executive Director COMSATS; an Address by Mr. Akhlaq Ahmad Tarar, Chairperson Consultative Committee and Federal

EXCERPTS FROM SPEECHES MADE AT THE INAUGURAL CEREMONY

Hopefully, this meeting will assist us to develop strategies to further strengthen science and technology to achieve sustainable development in the south, to enhance agricultural and industrial productivity and increase food security, self-reliance, enhanced livelihoods and poverty reduction in our communities.

Dr. A.B. Salifu, Chairperson CSIR, Ghana

I am very glad to report that COMSATS is making steady progress to enhance its international role. The Membership of the Commission, as well as the Membership of the Network of S&T Centres of Excellence is increasing, the capacity-building programmes are on the rise and financial sponsorship from Member states has considerably improved.

Dr. I.E. Qureshi, Executive Director COMSATS

.It is understood that the elevation of a country to become a knowledge society is unachievable without international partnership. A huge amount of financial resources and human efforts can be spared by getting into North-South and South-South cooperation programmes.

Mr. Akhlaq Ahmad Tarar, Chairperson COMSATS Consultative Committee

The benefits of modern scientific knowledge have the potential of changing the destinies of nations by reinvigorating economies, improving the health and nutrition of populations and providing means for decent living.

Dr. Eduardo Posada, Chairperson COMSATS Coordinating Council

It gladdens my heart that these COMSATS meetings have facilitated the congregation of scientists, mathematicians, technologists and other distinguished scholars, under the COMSATS platform for the promotion of Science, Technology and Innovation for the sustainable development of the South .

Hon. Joseph Oteng Adjei, Minister for Environment, Science, Technology and Innovation, Ghana

Secretary, Ministry of Science and technology, Government of Pakistan; and an Address by Dr. Eduardo Posada, Chairperson Coordinating Council and Executive Director Centro Internacional de Fisica (CIF). A message from the Ghanaian Minister for Environment, Science, Technology and Innovation, Dr. Joseph Oteng Adjei, was also read out on the occasion.

Other distinguished guests of the inaugural ceremony included the Ambassador of Zimbabwe; Deputy High Commissioner of Nigeria in Accra; and the Director (Science, Technology and Innovation), MESTI, Ghana.

2nd Meeting of COMSATS Consultative Committee

The Consultative Committee meeting was presided over by the then Federal Secretary, Ministry of Science and Technology, Government of Pakistan, Mr. Akhlaq Ahmad Tarar, in his capacity as the ex-officio Chairperson of the Committee. The Executive Director COMSATS co-chaired the meeting as the Secretary of the Committee. Apart from the senior officials of COMSATS Secretariat, the Committee meeting was attended by representatives of COMSATS Focal Points in Bangladesh, Colombia, Egypt, Ghana, Iran, Kazakhstan, Nigeria, Pakistan, Senegal, Sri Lanka, Sudan and Uganda.

During its two technical sessions, the Committee meeting deliberated upon a nine-point agenda that included:

- review of the five-year Strategy of COMSATS, approved by the Coordinating Council in its 15th meeting (Turkey, 2012);
- strengthening the coordination between Focal Points and Centres of Excellence within Member States for facilitating the

COUNTRY STATEMENTS PRESENTED DURING THE 2ND CONSULTATIVE COMMITTEE MEETING

The strong liaison between COMSATS and BCSIR has not only proved to be extremely useful for the efficient functioning of COMSATS, but has also provided tangible benefits for the people of our country.

Mr. Shahid Hasan, Deputy Secretary
Ministry of Science and Technology, Bangladesh

The situation of Science and Technology in Colombia has substantially improved in the last years hands-on science centers have been developed successfully in Colombia This experience can be transferred to other COMSATS countries and even a specific programme can be established.

Dr. Eduardo Posada, Executive Director CIF, Colombia

Egypt supports COMSATS programmes through joint research work, Training facilities, technology transfer, patents application, and it can serve as a hub for international relations with other countries, especially Germany, France, Japan and Italy.

Prof. Yasser R. Abdel Fattah, Secretary General, Supreme Council for Research Centers and Institutes, Egypt

Ghana is ready for collaboration not only with countries in the South, but also with countries from the North and far East to use Science and Technology to create better life for mankind.

Dr. Benony Komla Kortatsi, Director MESTI, Ghana

(Iranian institutions) would be delighted to have joint research depending on (the needs of) COMSATS member countries. The IROST would be pleased to make arrangements to collaborate with Member States based on their interest.

Dr. Ahmad Akbari, President IROST, Iran

Nigeria is blessed with a good number of academic and research centres that are carrying out research activities in order to address the country s multifarious societal challenges.

Prof. A.R.T Solarin
Director/Chief Executive NMC, Nigeria

Pakistan has made over the years a substantive investment in the National STI system, with determined efforts to develop new institutions, as well as enhancing capacities in the existing R&D institutions.

Mr. Amjad Hussain,
Joint Scientific Adviser (IL), MoST, Pakistan

The policy of scientific and technological research is (important for) the promotion and coordination of fundamental and applied research, (and) can stimulate the vital sectors of the economy Senegal is willing to work with all the members of our common organization.

Prof. Tahir Diop
Directeur de la Recherche, Direction Générale de l'Enseignement Supérieur, Ministère de l' Enseignement Supérieuret de la Recherche, Senegal

execution of programmes and activities of COMSATS;

- enhancing the role of Focal Points to address the financial issues facing COMSATS;
- overviewing COMSATS activities and update on the follow-up of 2nd Commission Meeting of COMSATS (2012); and
- reviewing implementation status of the decisions of the 1st meeting of COMSATS Consultative Committee (2009).

...the key elements of Sri Lanka s Science, Technology & Innovation Strategy (2011-2015) include: directed R&D for socio-economic development; capacity building through Advanced Technology Initiative, Techno-entrepreneurship initiative, STI infrastructure modernization initiative, International partnerships in STI, coordinated timely funding mechanisms, science popularization, etc.

Prof. Vijaya Kumar,
Chairman, Industrial Technology Institute, Sri Lanka

some of the recent initiatives of Sudanese Ministry of Science and Communications for the development of S&T sector include encouraging the establishment of technology incubators and science parks; ensuring adequate infrastructure for S&T development; etc.

Prof. Dr. M. Galal Mohamed Ahmed
President Council of S&T and D.G NCR, Ministry of Science and Communications, Sudan

Moreover, the participating delegates presented Country Statements covering their respective government s stance on S&T-led sustainable development and recommendations for enhancing the effectiveness of programmes and activities of COMSATS in its Member States.

Prof. Yasser R. Abdel Fattah, Secretary General, Supreme Council for Research Centers and Institutes, Ministry of Scientific Research, Egypt; and Mr. Isaac Kofi Yankson, Scientific Secretary, Building and Road Research Institute (BRRI), CSIR, Ghana, were appointed as the Rapporteurs of the meeting.

The meeting noted with satisfaction organization of the 2nd Commission Meeting of COMSATS at the level of representatives of Heads of State/Government in April 2012, and rotation of the Chairpersonship of COMSATS to Ghana. The Committee hoped that Ghana s leadership will strengthen the organization, especially in the African region. The Committee also appreciated Pakistan s pledge to contribute US$ 1 million towards the Endowment Fund, made during the 2nd Commission Meeting in 2012 by the then Prime Minister of Pakistan, who convened the Meeting as the Chairperson.

Salient decisions of the Meeting also noted in the Rapporteur s Report pertained to:

Endorsement of the five-year Strategy of COMSATS (2012-2016);
Request to the honourable Chairperson of COMSATS, H.E. John Dramani

Mahama, the President of the Republic of Ghana, to send letters to all Commission Members, to seek their technical and financial support for the programmes and activities of COMSATS;
Urging the Focal Points in Member Countries to make necessary funds available to the institutions in their countries affiliated with COMSATS, to enable them to play an active role in the organization s programmes and activities;
Selection of the Chinese, Colombian, Egyptian, Iranian and Nigerian Focal Points of COMSATS as members of the Technical Advisory Group.

16th Meeting of COMSATS Coordinating Council

The 16th meeting of COMSATS Coordinating Council was held on May 2-3, 2013, in Accra, Ghana, under the chairmanship of Prof. Dr. Eduardo Posada, Executive Director CIF, Colombia. The Executive Director COMSATS co-chaired the meeting in his capacity as the Secretary of the Council.

The meeting was attended by Council Members or their representatives from 12 Centres of Excellence of COMSATS; BCSIR-Bangladesh, Embrapa Agrobiologia-Brazil, ICCES-China, CIF-Colombia, NRC-Egypt, CSIR-Ghana, IROST-Iran, NMC-Nigeria, ICCBS-Pakistan, CIIT-Pakistan, IRCC-Sudan, and TÜBITAK MAM-Turkey, as well as senior officials of COMSATS Headquarters. Moreover, Dr. Akgul Darisheva, Center of Earth Sciences, Metallurgy and Ore Benefication (CESMOB), Kazakhstan, and Dr. Vijaya Kumar, Industrial Technology Institute (IT), Sri Lanka, attended the meeting in order to formally present the cases of their institutions for induction in COMSATS Network.

In its three technical sessions, the meeting deliberated on a 14-point agenda. As per the standard format of the meeting, the Executive Director COMSATS presented COMSATS Annual Activity Report (May 2012 April 2013); the

Heads/representatives of the Centres of Excellence made presentations on the scientific activities of their respective Centres during the period since the last Council meeting; and the Advisor (Programmes) COMSATS briefed the Council on the administrative and financial matters of COMSATS, as well as the implementation status of the decisions taken by the Council in its previous meeting in 2012.

During a separate agenda-item, progress reports of the three operational International Thematic Research Groups (ITRGs) on Climate Change and Environmental Protection ; Information and Communication Technologies ; and Natural Products Sciences were presented to the Council by their respective Lead Centre. The matters related to the launching of remaining ITRGs and challenges faced by the Lead Centres in this regard were also discussed.

Under the agenda-item related to the Future Programmes of COMSATS, the Council discussed at length different ways and means for effective implementation of the new initiatives of COMSATS; namely, establishment of COMSATS Technology Park at CIIT, Pakistan; launching of COMSATS Distinguished Professorship Scheme; and constituting a Network of experts on Science, Technology and Innovation Policy .
The key decisions taken by the 16th Coordinating Council meeting included:

Re-election of Dr. Eduardo Posada Florez, Executive Director CIF, Colombia, as the Chairperson of Coordinating Council for a further term of three years;
Approval of the proposed amendments in the Charter of the Network of International S&T Centres of Excellence;
Induction of Industrial Technology Institute (ITI) - Sri Lanka in COMSATS Network;
Disassociation of the Biosphere Reserve - Beni Biology Station (BBS), Bolivia, from COMSATS Network;
One-year extension of the tenure of the present members of COMSATS Technical Advisory Committee (TAC);
Consideration of possibility to depute officials from the Centres of Excellence to

work at COMSATS Secretariat for a period of 3 to 6 months;

Approval of a mechanism for the functioning of COMSATS Distinguished Professors Scheme; and

Agreement to send a condolence message to the grieved family of late Prof. Lewis T. Chadderton, who was one of the founding members of COMSATS TAC.

Thanks for the opportunity to meet you and expand my horizon of the world. Let's keep the torch aflame. I was inspired to do more for my country, Africa and the Network , *Prof. A.R.T. Solarin, Director/Chief Executive National Mathematical Centre, Nigeria, to COMSATS' colleagues after the meeting.*

I was impressed with the organization of the meetings with the quality of the shared documents, and with the achievements of COMSATS in the context of the original vision of Prof. Abdus Salam , *Prof. Keto Elitabu Mshigeni, Vice-President for Africa, TWAS, to the Executive Director TWAS.*

A Communiqué was unanimously approved at the conclusion of the meeting. It was decided that the next (17th) meeting of the Coordinating Council will be hosted by the Iranian Research Organization for Science & Technology (IROST), Iran.

Communiqué of the
16th Coordinating Council Meeting of COMSATS
(May 2-3, 2013, Accra, Ghana)

The Members of the Coordinating Council of COMSATS participating in the 16th meeting of the Council organized by the COMSATS' Centre of Excellence in Ghana, the Council for Scientific and Industrial Research (CSIR), after having deliberated upon the issues of common interest on 2nd and 3rd of May 2013 in Accra, wish to express their unanimous views as under:

1. The arrangements made for the 16th Council meeting and the hospitality extended to the Council Members by CSIR and its parent department, the Ministry of Environment, Science, Technology and Innovation (MESTI) are highly appreciated.
2. Thanks are due to the Government of Ghana for patronizing COMSATS through the office of the Chairperson of COMSATS, the honourable President of Ghana, H.E. Dr. John Dramani Mahama.
3. The leadership provided by Professor Dr. Eduardo Posada F., as the Chairperson of the Council during the period (2010 2013) has been outstanding. His re-election for the same position for a second tenure of 3 years is warmly welcomed.
4. The Council welcomes the induction of a new Centre of Excellence in the Network; namely, the Industrial Technology Institute (ITI) of Sri Lanka. The continuing expansion of the Network is indication of the success of S&T cooperation mechanism through interactivity among the leaders of R&D organizations, afforded through Council meetings.
5. The efforts of COMSATS Secretariat to meticulously prepare necessary documentation for the Council meeting and effectively engage Council members as well as the host Institution in order to ensure successful organization of the meeting are noted with appreciation.
6. The scope of scientific R&D being undertaken by various Institutes under CSIR is very encouraging. Considering that the CoE in Ghana has been re-designated since 2011, it is strongly recommended that apart from Building Road Research Institute (BRRI), other Institutes under CSIR should be encouraged to get into cooperative R&D activities with Members of the Network of CoEs.
7. The COMSATS' Centres of Excellence are undertaking R&D work in different disciplines of S&T according to their mandates and the national priorities of respective Member States. However, the number of scientific collaboration visits among the Network members need to be encouraged and enhanced.
8. The Council appreciates the standing offers of 100 postgraduate scholarships per year by CIIT-Pakistan, and seven PhD scholarships and five post-doctoral fellowships by IROST-Iran, and encourages other Centres of Excellence to offer such scholarships/fellowships to researchers/students from COMSATS Member Countries in order to promote the exchange of knowledge, expertise and resources.
9. The partnership of International organizations in the capacity-building workshops and training programmes undertaken by COMSATS is acknowledged with gratitude. In particular, strong mutual cooperation between COMSATS and ISESCO leading to six joint activities in 2012, is highly encouraging. In this connection, the ISESCO medal awarded to COMSATS is much appreciated.
10. The Council encourages COMSATS Secretariat to continue its efforts towards enhancing the Membership of the Commission and the Network of Centres of Excellence.
11. The Council has noted the efforts of COMSATS Secretariat to implement COMSATS five-year strategy and advises all Centres to extend full support to the Secretariat in this regard. In particular, the launching of more International Thematic Research Groups should be expedited by all concerned Lead Countries.
12. The progress reported by the leaders of three active International Thematic Research Groups, in the areas of Climate Change, Natural Products and ICTs are praiseworthy. The relevant group leaders are requested to acknowledge COMSATS in their research publications.
13. A Committee, which was constituted during the 15th Council meeting, and entrusted to recommended amendments in the Charter of the Network completed its work in time to make it possible for the Council to unanimously adopt these amendments in the 16th meeting. All members of the Committee are thanked for their valuable contributions.
14. The Council has noted the Secretariat s request regarding the participation of Centres of Excellence in COMSATS publications and emphasizes the need to contribute News reports and scholarly articles for publication in COMSATS two-monthly Newsletter and biannual journal, Science Vision .
15. While appreciating the generous in-kind contributions towards COMSATS activities made by Member States and Centres of Excellence alongwith the annual grant of 0.4 Million US $ from the Government of Pakistan, the budgetary handicap of the organization to fulfil all provisions of its mandate is noted with concern. It is strongly advised that the efforts to seek voluntary Annual Membership Contribution may be enhanced, and avenues be found to operationalize the Endowment Fund approved during the Second Commission meeting.
16. The Council reiterates its firm commitment to enhance S&T capacity of all Member States through mutual cooperation and assistance to one another through the platform of COMSATS. In turn, the Council calls upon Member States to increase funding for the development of their S&T sectors with a clear target of achieving a level of 2% of GDP to be spent as Gross Expenditure on Research and Development (GERD).

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, considers and examines audited reports of COMSATS Secretariat and other projects; evaluates rules and regulations of COMSATS Secretariat; and deliberates upon any other administrative issue proposed by the Executive Director.

33RD AND 34TH MEETINGS OF COMSATS MANAGEMENT COMMITTEE

The 33rd meeting of the COMSATS Management Committee was held on April 8, 2013, at COMSATS Secretariat. The meeting was chaired by the Executive Director COMSATS, Dr. Imtinan Elahi Qureshi. Dr. Arshad Malik, Advisor, COMSATS Institute of Information Technology (CIIT) (Representing Rector CIIT); Mr. Asim Shahryar Husain, CEO COMSATS Internet Services (CIS); Dr. Tariq-ur-Rahman, Ex-Chairman, Pakistan Council for Science and Technology (PCST); Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Secretariat; Mr. M. Bilal Chouhan, Deputy Director (A&E), COMSATS Secretariat and Mr. Amanullah Khattak, Deputy Director (F&A), COMSATS Secretariat attended the meeting.

The Committee applauded the efforts and contributions of two outgoing Advisors of COMSATS, (i) Mr. Parvez Ahmad Butt, who was Founding Executive Director COMSATS and served the organization for more than 14 years in different capacities, and (ii) Dr. Hasibullah, who served COMSATS for more than 8 years as Advisor (International Affairs). This particular meeting of the Management Committee was quite important with reference to its support for the Secretariat s deliberations in the 2nd meeting of COMSATS Consultative Committee and 16th meeting of COMSATS Coordinating Council, which were subsequently held in Accra (Ghana) from 1st to 3rd May 2013. Advisor (Programmes) gave a detailed presentation on the activities and major developments of COMSATS that had taken place since the last meeting was convened. The members were also briefed about the preparations made for the 2nd Consultative Committee and 16th Coordinating Council meetings. It was informed that

the honourable Minister and Federal Secretary, Ministry of Science and Technology, Government of Pakistan, had sent invitation letters to their counterparts in 20 Member Countries of COMSATS in January 2013. The invitation letters also sought nominations of representatives of COMSATS national Focal Points and Heads of Centres of Excellence for participation in the two statutory body meetings. It was further noted that invitation letters were later issued from the office of the Executive Director COMSATS to the nominated representatives. The necessary preparations of the two meetings were reviewed and found satisfactory.

The CEO CIS informed the Committee in detail about the progress made and the current state of affairs of his organization, while Dr. Arshad Malik, Advisor at CIIT, who was representing the Rector CIIT, Dr. S.M. Junaid Zaidi, gave a detailed account of the activities of COMSATS University. The Committee found the progress made by the two institutions satisfactory.

The administrative affairs of COMSATS Secretariat, including the revision of pay scales and some other allowances, introduction of new loan policy, and new medical rules, were also presented in the meeting and approved. The audited accounts of COMSATS Secretariat for the financial year 2012; budget estimates for the financial year 2013-14; and status of Annual Membership Contributions of Member Countries were also shared with participants of the meeting.

Later on December 31, 2013, the 34th meeting of the Management Committee was held under the chairpersonship of the Executive Director COMSATS. Apart from the participants of the 33rd Meetings of the Committee, Dr. Haroon Rashid, Pro-Rector, CIIT, and Mr. Sabih-ur-Rahman, the newly inducted Advisor (Host Country Affairs) COMSATS Secretariat, attended the meeting.

The Chair and participants of the meeting welcomed Mr. Sabih-ur-Rahman in his new position at COMSATS Secretariat. The Chairman briefed the meeting about his official foreign visits and important meetings held during the intervening period since the 33rd meeting of the committee, while Advisor (Programs) discussed the follow-ups of the 2nd Consultative Committee and 16th Coordinating Council meetings.

Among its decisions, the meeting granted approval of the Standing Order regarding revision of pay and allowances of COMSATS employees, and revised medical rules. The D.D (F&A) presented the audit report of COMSATS accounts for the fiscal year 2013. The status of the Annual Membership Contributions and the efforts made to pursue the matter of COMSATS Endowment Fund with the Ministry of Science and Technology, Government of Pakistan, were also shared with members of the Committee.

2

ACTIVITIES OF COMSATS SECRETARIAT

- Campaign for Enhancing COMSATS' Membership 14
- Campaign for Enhancing COMSATS' Network of International S&T Centres of Excellence 15
- Follow-up on the Decisions of the 2nd Consultative Committee Meeting of COMSATS 16
- Follow-up on the Decisions of the 16th Coordinating Council Meeting of COMSATS 17
- Campaign for Annual Membership Contributions 19

COMSATS Secretariat serves a dual role of being the Secretariat to the Commission and the Headquarters to the Network. It performs a wide range of activities in consultation and coordination with statutory bodies of COMSATS, and implements the organization s international programmes and activities in partnership with other intergovernmental agencies, national S&T institutions, R&D organizations members of academia and scientific community across the world. Some of the core activities of the Secretariat are to campaign for: the Annual Membership Contributions; enhancing the membership of COMSATS and its Network of S&T Centres of Excellence; as well as regularly holding statutory body meetings.

ACTIVITIES OF COMSATS SECRETARIAT

Campaign for Enhancing COMSATS Membership

A regular feature of COMSATS activities is concerned with the invitations to developing countries to join COMSATS as new Member States. Similar efforts resulted in Turkey s signing of accession agreement to join COMSATS in 2012. Efforts were continued during 2013 and follow-ups made to invite and encourage more countries to join COMSATS as its Member States. The matter of COMSATS membership was followed up with senior officials of the Governments of Brazil, Indonesia, Iraq, Malaysia, Nepal, and Turkey.

The matter of Brazil s membership was pursued during the Executive Director COMSATS meeting with Dr. Carlos A. Nobre, National Secretary, Brazilian Ministry of Science, Technology and Innovation (MOSTI), during the former s visit to Brazil on November 25-27, 2013, to attend the Sixth World Science Forum (WSF) of UNESCO, held in Rio de Janeiro.

During the same event, the Executive Director COMSATS held a meeting with Dr. Adil I. Matloob, Advisor, Ministry of Science and Technology, Government of Iraq, and requested him to take up the proposal of Iraq s membership to COMSATS with the Iraqi Minister for Science and Technology, to which he kindly agreed. As a follow-up of the meeting, COMSATS accession documents and previous correspondence between COMSATS and the Government of Iraq were sent to Dr. Matloob for onward submission to the Minister for Science and Technology, Government of Iraq.

The Indonesian delegate to the Vice Chancellors Forum on Universities in the Islamic World: Challenges of Internationalization , September 23-24, 2013, at Islamabad, Dr. Edy Suandi Hamid, Rector, Universitas Islam Indonesia (UII), was requested by the Executive Director COMSATS to follow-up COMSATS membership invitations to Indonesia. Dr. Hamid was handed over the related correspondence

made earlier with the relevant officials of Indonesian Government. In a similar meeting, during the Forum, the Executive Director COMSATS requested Prof. Tan Sri Dato Dr. Sharifah Hapsah Syed Hasan Shahbudin, Vice Chancellor, Universiti Kebangsaan Malaysia (UKM), to pursue the matter of Malaysia s membership to COMSATS.

On the side-lines of COMSATS Regional Workshop on National Innovation System and Intellectual Property (October 7-9, 2013, Islamabad, Pakistan), the Advisor (Programmes) COMSATS held a meeting with, Dr. Deba Bahadur Khadka, Vice President of the Chemical Society of Tribhuvan University, Nepal. During the meeting, Dr. Khadka informed that the Secretary, Ministry of Science, Environment and Technology, Nepal, has been acquainted with the benefits and obligations of COMSATS membership and, in later correspondence, assured that the matter will be further pursued as soon as the new Nepalese Parliament is constituted.

The ratification process of Turkey s agreement to join COMSATS is being pursued with the Turkish Government since the signing of COMSATS Accession Agreement by Mr. Babür Hızlan, Ambassador of Turkey to Pakistan, on August 31, 2012. In this regard, the Executive Director COMSATS has solicited the support of the Foreign Secretary, Government of Pakistan and the Pakistani Ambassador to Turkey.

Campaign for Enhancing COMSATS Network of International S&T Centres of Excellence

COMSATS has always endeavoured to revitalize and strengthen South-South scientific cooperation through its Network of International S&T Centres of Excellence. To improve its international visibility and enhance its regional outreach, expanding COMSATS Network by inducting new members has been a key priority of COMSATS, as set out in its Strategic Plan (2012-2016).

The COMSATS Consultative Committee in its second meeting also encouraged COMSATS Secretariat to continue its efforts to enhance the membership of the Network of S&T Centres of Excellence. In this regard, as a result of the close coordination with the Tunisian institutions, the Government of Tunisia nominated the Water Researches and Technologies Centre of Borj-Cedria (CERTE), as a potential member of COMSATS Network. Decision on the application for membership of CERTE will be taken by the Council members at its 17th meeting in Iran.

Induction of Industrial Technology Institute (ITI), Sri Lanka, as the 18th Network Member

In May 2013, the Industrial Technology Institute (ITI) of Sri Lanka became the 18th member of COMSATS Network of International S&T Centres of Excellence following the unanimous approval of the Council. ITI s case for induction in COMSATS Network was

presented to the Council by Chairman Board of Management ITI, Prof. Vijaya Kumar. The Director/CEO of the Institute, Dr. G.S.A. Premakumara, has been appointed as the member of Coordinating Council.

With a manpower of around 330, the Industrial Technology Institute, formerly Ceylon Institute of Scientific & Industrial Research (CISIR), conducts client-sponsored research and development for government agencies, commercial businesses, foundations and other organizations of Sri Lanka. The ITI comprises of five divisions: Technical Service Division; R&D Division; Quality Assurance Department; Administration; and Operation Division and Information Service Centre.

The ITI has the following four laboratories engaged in providing services to local industry:

- Chemical and Microbiological laboratory;
- Materials laboratory;
- Industrial Metrology laboratory; and
- Electrotechnology laboratory.

These laboratories have been designated for carrying out R&D programmes in disciplines of Biotechnology, Materials Technology, Food Technology, Molecular Biology, Herbal Technology, and Environmental Technology.

Follow-up on the Decisions of the 2nd Consultative Committee Meeting of COMSATS

COMSATS Secretariat was encouraged by the Consultative Committee during its 2nd meeting in Accra in May 2013, to continue its efforts to achieve science-led socio-economic development in its Member Countries through all possible means within its resources. In this regard, COMSATS is making continuous efforts for building capacity of its Member States through organizing joint conferences, workshops, seminars, etc. (Section 3). Moreover, a number of new initiatives have been launched recently, including COMSATS Distinguished Professorship Scheme; COMSATS Panel of Experts on Science, Technology and Innovation Policy ; COMSATS Technology Park; and COMSATS Technical Advisory Group, which are most relevant to the scientific needs of Member Countries.

The Committee took note of the announcement of the Prime Minister of Pakistan during the 2nd Commission Meeting to create an Endowment Fund for COMSATS to be run on contributions from all Member States with US$ one million as seed money from the Government of Pakistan. During the reporting period, strenuous efforts were made by COMSATS Secretariat to complete the administrative and

legal formalities for establishing the Endowment Fund in consultation with the relevant Ministries of the Government of Pakistan . In this regard, the Cabinet Division of the Government of Pakistan has issued a directive as per the announcement of the Prime Minister. Accordingly, the Ministry of Finance, was approached through the Ministry of Science and Technology for release of funds. The draft rules of COMSATS Endowment Fund were prepared and submitted for vetting to Ministry of Finance. The rules have been duly vetted by the regulations wing of the Ministry of Finance and the Ministry of Capital Administration and Development. Subsequently, the case was forwarded to the Ministry of Law, Justice and Human Rights for vetting. After the draft rules are vetted by the Ministry of Law, Justice and Human Rights, the case will be forwarded to the Ministry of Finance for release of US$ one million.

As endorsed by the Consultative Committee, COMSATS Secretariat continued correspondence with the Turkish Government and its Embassy in Islamabad, for completion of the ratification process for Turkey s Membership to COMSATS.

Deliberations and decisions were also made during the 16th Coordinating Council Meeting and 2nd Consultative Committee Meeting on some common agenda items: enhancement of membership of COMSATS Commission and Network of Centres of Excellence and encouragement for the Member States to make Annual Membership Contributions.

Follow-up on the Decisions of the 16th Coordinating Council Meeting of COMSATS

The Coordinating Council during its 16th meeting took a number of important decisions regarding the membership of the Network, as well as effective implementation of COMSATS programmes and activities in COMSATS Member States. During the period that followed the Council meeting, the decisions were actively followed up by COMSATS Secretariat for effective implementation. Some key follow-ups of the meeting are as follows:

Upon the unanimous approval of the Council to induct the Industrial Technology Institute (ITI), Sri Lanka, in COMSATS Network, the Institute was issued a Certificate of Membership to COMSATS Network on August 27, 2013.


Commission on Science and Technology for Sustainable Development in the South

Certificate of Membership

COMSATS is Pleased to Present this Certificate to

Industrial Technology Institute (ITI) - Sri Lanka

on becoming a Member of COMSATS' Network of International Science & Technology Centres of Excellence for Sustainable Development in the South, as approved in the 16th Meeting of Coordinating Council, Accra, Ghana (2-3 May, 2013)

Dr. Imtinan Elahi Qureshi

The approved amendments of the Council in Charter of the Network of International S&T Centres of Excellence was taken into account by updating the Foundation Documents.

The Council s decision regarding reconstitution of COMSATS ten-member Technical Advisory Committee (TAC) was followed up by requesting TWAS to nominate 10 potential Memers, out of which five could be invited to join TAC. The

other 5 members comprise of Executive Director COMSATS, as ex-officio member, and four continuing members. Consent was sought from potential members and five of these, from Brazil, Egypt, Ethiopia, Iran and Malaysia have agreed to join the TAC as members. The new members would be inducted in the TAC upon the Council s approval during its 17th meeting to be held in Iran.

The 16th Coordinating Council Meeting had approved a mechanism for selection of candidates and functioning of COMSATS Distinguished Professorship Scheme. In the light of the same, COMSATS Headquarters has selected the following three officials as the first batch of COMSATS Distinguished Professors from a total of 11 applications received in this regard:

1. Prof. Adewale Roland Tunde Solarin, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria;
2. Prof. Dr. Sajjad Mohsin, Dean, Faculty of Information, Science and Technology, COMSATS Institute of Information Technology (CIIT), Pakistan; and
3. Prof. Dr. M. Iqbal Choudhary, Director, International Center for Chemical and Biological Sciences (ICCBS), Pakistan.

The Curriculum Vitae of the above-mentioned Distinguished Professors were circulated among COMSATS Centres of Excellence on October 14, 2013, f0r dissemination among R&D/educational institutions in their countries. No request has, so far, been received from any Centre of Excellence for delivery of invited lectures by these Distinguished Professors. The visits will be organized in accordance with the procedure prescribed by the Council during its 16th meeting.

Detailed consultations were made with the senior officials of UNESCO, TWAS, Sri Lankan government and other relevant organizations for identification of suitable officials for COMSATS Panel of Experts on Science, Technology and Innovation Policy . As a result of these consultations, the following five officials from UNESCO, TWAS, COMSATS, Centro Internacional de Fisica (CIF) and Sri Lankan Government have agreed to serve as members of the Panel.

- H.E. Prof. Tissa Upali Vitarana, Minister (Senior) for Scientific Affairs, Government of Sri Lanka;
- Ms. Lidia Brito, Director, Division for Science Policy and Sustainable Development, Natural Science Sector, UNESCO;
- Dr. Eduardo Posada F., Director Centro Internacional de Fisica (CIF), Colombia, and Chairperson COMSATS Coordinating Council;
- Prof. M. H. A. Hassan, Former Executive Director TWAS, and Honorary Lifetime Member of COMSATS Coordinating Council; and
- Dr. I. E. Qureshi, Executive Director COMSATS.

CIIT s standing offer of 100 post-graduate scholarships for students of COMSATS Member States to study at its various campuses made during the Council meeting was circulated sent to all Centres of

Excellence by COMSATS Secretariat. In response a total of 27 Nigerian students were nominated by National Mathematical Centre (NMC) of Nigeria for pursuing postgraduate studies at CIIT. In this regard, 11 students were accepted by CIIT, 8 of which have initiated their studies, whereas 3 candidates will have to satisfy certain admission prerequisites. COMSATS Secretariat had provided travel grants to the selected students to travel to Pakistan.

Correspondence and necessary coordination was made by the Secretariat on the Council s decisions regarding ITRGs, cooperation with UNESCO, and deputation of officials to work at COMSATS Secretariat also continued till the end of the year 2013.

Campaign for Annual Membership Contributions

The participants of the 2nd Consultative Committee meeting had agreed to sensitize their respective governments about the significance of regularly making their Annual Membership Contributions (AMC) in order to make the necessary funds available to COMSATS Secretariat for implementing the organization s 5-year Strategy plan. The Annual membership contributions are maintained as a Trust Fund for all Member States and used to carry out technical activities and programmes in the contributing country. During the calendar year 2013, COMSATS Secretariat corresponded/followed-up with the focal points in Member States, including Bangladesh, Egypt, Jamaica, Kazakhstan, Philippines, Sri Lanka, Sudan and Zimbabwe to expedite the payment of AMCs as per their commitment. As a result, COMSATS received Annual Membership Contributions (AMC) from two Member States, China (US$ 20,000), and Sudan (US$ 20,000). The Government of Pakistan has also agreed in principle to grant US$ 20,000/- per annum as its Annual Membership Contribution towards COMSATS.

3

SCIENCE AND TECHNOLOGY EVENTS ORGANIZED WITH COMSATS SUPPORT

- International Symposium on 'Nanotechnology and Nano-biotechnology Innovative Applications for Sustainable Green Economy and Climate Change Mitigation' (December 16-18, 2013, Serpong, Indonesia) 22
- 3rd International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' (December 9-13, 2013, Nabeul, Tunisia) 24
- Seminar on 'Science for Water Cooperation: Sharing Data, Knowledge and Innovations' (November 12, 2013, Islamabad, Pakistan) 27
- Regional Consultative Workshop on 'National Innovation System and Intellectual Property (Asia Region)' (October 7-9, 2013, Islamabad, Pakistan) 29
- National Seminar on 'Strategies for Enhancing South-South Cooperation in Human Resource Development' (September 12, 2013, Islamabad, Pakistan) 32
- National Workshops on Repair and Maintenance of Scientific, Engineering Equipment held in Sudan and Ghana (August 2013) 33
- International Training Workshop on 'Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries' (July 14-23, 2013, Beijing, China) 38
- Travel Grants and Sponsorships 39

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 linkages; build indigenous capacities; and promote S&T as a tool for development. Since its establishment, COMSATS has organized and sponsored over 180 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 Symposium on Nanotechnology and Nano-biotechnology Innovative Applications for Sustainable Green Economy and Climate Change Mitigation (December 16-18, 2013, Serpong, Indonesia)

The International Symposium on Nanotechnology and Nano-biotechnology Innovative Applications for Sustainable Green Economy and Climate Change Mitigation (ISN-2013) was held in Serpong, Indonesia, on December 17, 2013. The symposium was organized by COMSATS in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO), and the National Nuclear Energy Agency (BATAN) of Indonesia. The event was held in conjunction with Symposium on MOLINA for Green Energy . The purpose of the latter was to launch and promote national electric cars (MOLINA), which are indigenously developed hybrid cars by Indonesian research institutions working under the Ministry of Research and Technology, Government of Indonesia.

The symposium was officially inaugurated on December 16, 2013, at the Research Center for Science and Technology (PUSPIPTEK) of BATAN, by Prof. Dr. Djarot S. Wisnubroto, Head of BATAN, on behalf of the Indonesian Minister for Research and Technology, Prof. Dr. Muhammad Gusti Hatta.

The ceremony was attended by around 65 Indonesian scientists,

researchers, engineers, faculty members and scholars from institutions, such as National Nuclear Energy Agency, Indonesian Institute of Sciences (LIPI), Bandung Institute of Technology (ITB), Agency for the Assessment and Application of Technology (BPPT), and the University of Indonesia.

In his inaugural address, Dr. Wisnubroto informed the august gathering that BATAN recently celebrated 55 years of its establishment on December 5, 2013. He showed keen desire for the Republic of Indonesia to become a Member State of COMSATS and BATAN's inclusion in COMSATS Network of International S&T Centres of Excellence. The event facilitated networking among the scientists working in various disciplines of nanotechnology to address common problems, and share their research for applications of nanomaterials in energy, environment and Health.

The international symposium was attended by a total of 55 subject experts/officials, of these 16 foreign participants, were sponsored by utilizing the funds available under COMSATS-ISESCO Cooperation Agreement for 2013. The sponsored participants belonged to Bangladesh, China, Egypt, Iran, Malaysia, Morocco, Pakistan and Saudi Arabia. Besides the foreign participants, 39 local subject experts/officials belonging to various public/private universities, S&T/R&D organizations, Government Departments and NGOs working in Indonesia participated in the event.

The technical proceedings of the event were spread over 6 sessions, one plenary lecture session comprising talks by experts followed by two parallel sessions comprising presentations. There were eight plenary lectures by experts from Australia, China, Egypt, Indonesia, Pakistan, and Saudi Arabia, while 22 participants from Australia, Bangladesh, China, Indonesia, Iran, Japan, Malaysia, Morocco, and Pakistan delivered technical presentations. The topics of these talks and presentations related to applications of nanotechnology and nano-biotechnology in areas of energy, environment, architecture, medicine, agriculture and climate change mitigation. Some of these were Nanotechnology for Energy Efficiency; Roadmap of R&D of National Electric Vehicle; and Development of Advanced Nuclear Power Plan and its Influence to Green Economy. Technical talks during the parallel sessions focused on Green Energy and the various applications of Nanotechnology and Nano-biotechnology. Topics covered under these themes inter alia included, Boost Performance of Microbial Fuel Cells in Nanoscales; Innovative Nano Material for Solar Energy Harvesting; and Nano Materials for Environment and Energy Applications.

Other highlights of the event included a roundtable discussion session and a poster session. Panelists and participants of the discussion session reviewed the knowledge shared and learning made during the course of the symposium, and made recommendations focused at carrying out extensive R&D in nanotechnology to meet national development needs. The event concluded on December 17, 2013.

3rd International Workshop on Internet Security: Enhancing Information Exchange Safeguards (December 9-13, 2013, Nabeul, Tunisia)

The International Workshop on Internet Security: Enhancing Information Exchange Safeguards was jointly organized by COMSATS; ISESCO; the Inter Islamic Network on Information Technology (INIT); the Higher Institute of Technological Studies (ISET) of Nabeul, Tunisia; and the COMSATS Institute of Information Technology (CIIT), Pakistan, from December 9-13, 2013, in Nabeul, Tunisia. Hosted by ISET, the event was third of the series of workshops that are being jointly organized by COMSATS, ISESCO and INIT in their common member countries in order to train professionals working in the field of Information Technology to address issues and challenges related to information and Internet security.

The primary objective of the workshop was to provide a forum to the young scientists/researchers from the developing countries to learn about the latest advancements in the field of Internet security; promote the use of state-of-the-art technologies for protection of network and network-accessible resources from different types of malicious attacks; and identify effective Internet/information security solutions for general public, government organizations and commercial ventures through rigorous risk-analyses and security management approaches.

The event was attended by a total of 35 young researchers, practitioners, academicians, system administrators and software programmers working in the field of Internet/information security from Algeria, Iran, Morocco, Pakistan, Sudan, Tunisia, and Turkey.

The workshop was inaugurated on December 9, 2013, by H.E. Dr. Moncef Ben Salem, Minister for Higher Education and Scientific Research, Government of Tunisia. In his inaugural address, Dr. Salem stated that information security has become a critical concern for Internet users and developers, and there is a dire need to have a mechanism to build integrated systems to provide the necessary protection of information at all levels. He also expressed appreciation of COMSATS efforts in arranging subject experts for imparting the necessary knowledge and skills related to securing the use of information exchange over the Internet.

In his welcome address, Mr. Landolsi Foued, Director ISET-Nabeul thanked ISESCO, COMSATS and INIT for organizing this important workshop in Tunisia at his Institute, and highlighted the significance of ensuring Internet/information security.

Speaking on behalf of the President INIT, Mr. Muhammad Atiq-ur-Rehman, Senior Program Officer, INIT, stated that information is the most important asset of any organization and needs to be protected. He informed that INIT is actively engaged in programmes and activities related to encouraging the use of ICTs in OIC Member States and building capacity of the relevant human resource to effectively deploy, manage and protect the network resources.

Dr. Maha Merezak, Programme Specialist (Human & Social Science), Science Directorate, ISESCO, conveyed the greetings of the Director General ISESCO. She

stated that the national policies must be oriented towards better practices to ensure Internet security, as well as focused at building strong partnerships among governments, regulatory bodies and NGOs. She opined that harmonizing national policies for protection of electronic services and their users has become a necessity, which must be enforced through well-defined regulations and penalties to discourage criminal acts, such as those cited in the Budapest Convention of 2001.

On the occasion, Mr. M. Atiq-ur-Reman, Programme officer, INIT; Dr. Maha Merezak, Programme Specialist (H&SS), Science Directorate, ISESCO and Executive Director COMSATS addressed the gathering. In his speech, Dr. Imtinan Elahi Qureshi, Executive Director COMSATS, thanked the honourable Minister for Higher Education and Scientific Research, Government of Tunisia, for gracing the inaugural ceremony of the event with his presence, which he considered indicative of his commitment to build capacity of Tunisians in this important field. He stated that internet/information security is a common concern to all, which can only be addressed through enhanced international cooperation in this field. Recounting the principles and actions specified during the World Summit on Information Society held in Geneva (2003) and Tunis (2005), the Executive

Director COMSATS called for developing global culture of cyber security through stronger participation of international organizations. He also stressed the need of addressing ethical aspects of information exchange over Internet, such as data interception and propagation of hatred against religions. Dr. Qureshi stated that COMSATS, having a Network of 18 International S&T Centres of Excellence, has the necessary human and technical resources available to cooperate with other international organizations, such as ISESCO and UNESCO in different fields of science and technology, including Internet security. He also highlighted COMSATS on-going efforts and programmes aimed at achieving socio-economic development in the Member States through South-South cooperation in science and technology.

Other distinguished Tunisian guests at the inaugural ceremony included: Prof. Mohamed Ben Youssef, Director General, Water Research and Technologies Centre of Borj-Cedria (CERTE); Mr. Ali Gharsallah, Director General ISETs; Mr. Bouras Adel, Director General, Des Etudes Technologiques; and Prof. Mohamed Ben Amor, CERTE, as well as H.E. Mr. Mushtaq Ali Shah, Ambassador of Pakistan to Tunisia.

The workshop was conducted by five resource persons, namely, Dr. Malik Najmus Saqib , Assistant Professor, CIIT, Pakistan; Mr. Zafar Mir, Regional Manager, Information Security Risk, MENA HSBC, UAE; Mr. Asad Raza, Lecturer of Information Technology (Networking & Security), Majan University College, Oman; Dr. Ayman Mohammad Bahaa Eldin, Associate Professor of Computer Engineering, Ain Shams University, Egypt; and Ms. Wala Turki, Chief Engineer Officer of the Information System Security, Center for Studies and Research in Telecommunications (RSSI), Tunisia. The training modules pertained to various important subjects relating to Cryptography and Web Security, Organizational Security, Ethical Hacking, Cyber Security and Information Security Design Principles, and Offensive Security.

The specific topics covered during the workshop included: Symmetric Key and Asymmetric Key Cryptography; Block Ciphers and Stream Ciphers; Hash Functions; Digital Signatures; Data Encryption; Secure Electronic Transaction; Authentication Application; Industry Standard Bodies and Industry Standards; Security Policies, Objectives and Procedures; ISO 27001 ISMS Standard and related Security Controls ; Risk Assessment and Risk Assessment Plan; Information Assets Inventories; Business Continuity Plan; Disaster Recovery Plan; Cloud Computing Security; Cloud Assurance and Governance Models for Business Organizations; Ethical Hacking; Metasploit Framework; Meterpreter; Post Exploitation and Back Dooring; Dissecting Cyber Attacks; Distributed DoS Attacks & Mitigation Techniques;

Advanced Attack Techniques; Digital Spying; Hacking Wireless Networks; Passwords Hacking and Cracking; Information Gathering and Google Hacking; Vulnerability Scanning and Exploitation; and Network Security.

The Concluding Session of the workshop was held on December 13, 2013. Speaking on the occasion, Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Headquarters, emphasized the importance of Internet and information security at the levels of individuals, institutions/ organizations and countries. He called for a stronger collaboration among research organizations and universities of developing countries, and offered the human and technological resources available with COMSATS to address issues related to Internet/information security. He also thanked ISESCO and INIT for their continuous support towards capacity-building activities of COMSATS. Mr. Foued Landolsi, Director ISET, Nabeul, thanked ISESCO, COMSATS and INIT for their financial and technical contributions towards the event, and appreciated the local and foreign participants for their active participation during the workshop.

Seminar on Science for Water Cooperation: Sharing Data, Knowledge and Innovations (November 12, 2013, Islamabad, Pakistan)

COMSATS organized a one-day seminar on Science for Water Cooperation: Sharing Data, Knowledge and Innovations in Islamabad, on November 12, 2013 in commemoration of the 2013 World Science Day for Peace and Development. The event was held at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, and was attended by more than 70 students, academicians, scientists, and diplomats.

The event commenced with a brief inaugural session presided over by veteran scientist and former Advisor to the Prime Minister of Pakistan on S&T, Dr. Ishfaq Ahmad. The session comprised a Welcome Note from Dr. Shahid Ahmed Khan, Campus Director, CIIT, Islamabad; an Address by the Executive Director COMSATS,

Dr. Imtinan Elahi Qureshi; and a Keynote address by the Chief Guest.

Dr. Khan welcomed the distinguished guests and participants of the seminar and stressed the need for capacity-building events in sensitizing societies and proffering research-based solutions for development issues. In his address on the occasion, Dr. Qureshi noted that Pakistan has the distinction of being the country on whose request the United Nations decided to celebrate World Science Day every year on the 10th of November. Stressing the importance of the title of the Day, Dr. Qureshi gave a broader perspective whereby science has been used both for the betterment of mankind, as well as for the purpose of war and destruction. Only the lights of science need to be celebrated, he opined, while shadows are to be shunned and discouraged. Dr. Qureshi also elaborated worldwide focus on freshwater availability and cautioned that Pakistan will face a major destabilizing situation if water management were not addressed at the highest priority.

The technical session of the Seminar comprised four talks pertaining to the theme of the Day. Dr. Qamar-uz-Zaman Chaudhry, Senior Advisor, LEAD Pakistan, in his keynote speech, explicated the concept of water cooperation and highlighted its importance in the wake of Pakistan s diminishing water resources to a critical level of 1000 m^3 per person per year. He cautioned that serious steps must be taken in time to address the depleting water resources of Pakistan, which is highly vulnerable to climate change effects, lest the country face even graver issues of water, food and energy security. Some important issues to be addressed through water cooperation enumerated by Dr. Chaudhry included: water allocation, upstream/downstream impact of water pollution, Water abstraction/ over exploitation, construction of infrastructure, and costing of water resources and services.

Dr. Zulfiqar Ahmad, Professor, Department of Earth Sciences, Quaid-e-Azam University, Islamabad gave his presentation on Characterization of Upper Chaj Doab, Indus Basin, and depleting aquifers in the Rawalpindi City of Pakistan under changing climate , in which he established the importance of Ground Water Flow models to address the water related issues. Among major challenges in Pakistan exacerbating the water situation in Pakistan, recounted by Dr. Malik, included population growth, receding production of food crops due to water shortage; inequitable use of water resources; changing weather patterns due to climate change; insufficient water storage capacity; lack of allocation of necessary funds; etc. In view of these facts, the use of Ground water flow models was advocated, based on facts on usefulness and types of these models.

Dr. Amir Haider Malik, Professor, CIIT Abbottabad Campus, Abbottabad, Pakistan pointed out the need for more water reservoirs in the country to store runoff during rainy seasons. Sharing statistics on Pakistan, he informed that about 40% of water

from Irrigation System leaks and is wasted. The system supersedes limits of safe yield resulting excessive draw downs in levels of water wells.

Dr. Hassan Abbas, Assistant Professor, CIIT, Wah Campus, Wah, Pakistan, gave an insightful presentation titled Efficient Irrigation Future of Irrigation, Irrigation of Future , based on a strong assertion that better water conserving techniques are needed to deal with water shortage in various sectors, especially agriculture. He informed that Indus Basin Irrigation System (IBIS) is the world s largest with mean annual flow of 175 BCM (142 MAF). Dr. Abbas also drew a comparative of crop yields and water-use efficiency in the Indus Basin. Pointing out the poor quality water and bad management practices in Pakistan, he considered theft of water from irrigation canals, water-logging and salinity as major threats to the agriculture sector of this agrarian economy. A new concept of sub-irrigation was introduced that could enable Pakistan to save water at least 4 folds, increase agriculture yields by 64% and improve water-use efficiency by 6 folds.

The speakers advocated the efficient use of technology-based solutions in the field of water resource management to enhance per-capita water availability in the country. Consensus prevailed among the experts to make increased efforts to promote water cooperation among nations to ensure poverty reduction, socio-economic development, protection of environment, and promotion of peace and sustainability.

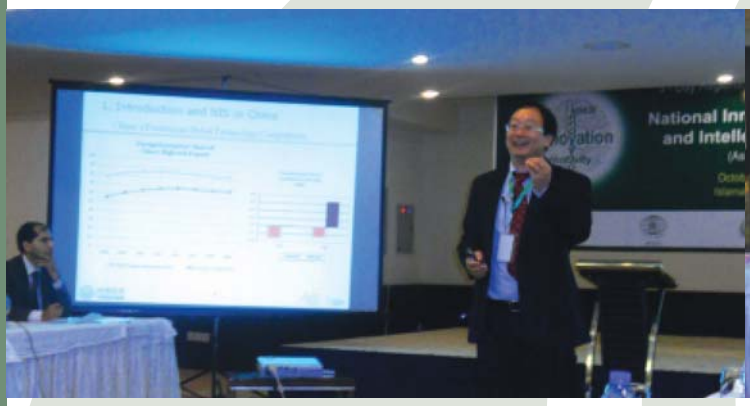
Regional Consultative Workshop on National Innovation System and Intellectual Property (October 7-9, 2013, Islamabad, Pakistan)

A Consultative Workshop on National Innovation System (NIS) and Intellectual Property (IP) was held in Islamabad, Pakistan, from October 7-9, 2013. The workshop was jointly organized by COMSATS, ISESCO, INIT, and CIIT.

The regional Consultative Workshop was aimed at promoting innovation driven S&T policy interventions and their impact on Asian national innovation systems. The main objective of the workshop was sensitizing and developing capability of the participants from the COMSATS and OIC Member States of the Asian Region, to understand, analyze and possibly develop NIS policies for strengthening technology capability, as well as responding effectively to the challenges of building competitiveness amid globalization and rapid technological change for their respective countries.

The inaugural session of the event was held on October 7, 2013. The Executive Director of the Higher Education Commission (HEC) of Pakistan, Dr. Mukhtar Ahmed, presided over the ceremony. Executive Director COMSATS, Dr. Imtinan Elahi Qureshi; Rector CIIT and President INIT, Dr. S. M. Junaid Zaidi; and Head of ISESCO Centre for Promotion of Scientific Research (ICPSR), Dr. Wafaa El Alami were the distinguished guests on the occasion. Around 70 subject specialists and participants from Bangladesh, China, Iran, Kazakhstan, Malaysia, Nepal, Pakistan, South Korea, Sri Lanka, United States, and Switzerland, participated in the inaugural function.

The eighth technical sessions of the workshop consisted of talks and presentations that introduced innovation, its types and classifications; highlighted the impact and effect of innovation on national economy; discussed delivery mechanisms for and key agents and actors in a national innovation system; elaborated intellectual property



and its role for knowledge-driven economy; covered the perspectives of universities, industries and R&D institutions and recommended their strong linkages; as well as addressed key issues viz. patent filing, prosecution and enforcement. An insight into the innovation policies of developing countries was also provided during the event through the country-specific presentations made by participants from Bangladesh, China, Iran, Malaysia, Nepal, South Korea, and Sri Lanka.

The institutions and organizations that were represented during the workshop included: World Intellectual Property Organization (WIPO), Switzerland; Intellectual Property Organization (IPO), Pakistan; COMSATS Headquarters, Pakistan; COMSTECH, Pakistan; Hong Kong University of Science and Technology, Hong Kong; School of Economics and Management, Tongji University, China; Tribhuvan University, Nepal; Coordinating Secretariat for Science, Technology and Innovation (COSTI), Sri Lanka; Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh; Iranian Research Organization for Science and Technology (IROST), Iran; and H.C. Park & Associates, USA.

The international training workshop was attended by a total of 51 subject experts. Out of the total 10 foreign participants of the event, seven were sponsored utilizing the funds available under COMSATS-ISESCO Programme. The seven sponsored participants belonged to Bangladesh, China, Iran, Kazakhstan, Malaysia, Nepal and Sri Lanka. Besides the foreign participants, 41 local subject experts belonging to various public/private universities, S&T/R&D organizations, government departments and NGOs working in Pakistan participated in the event.

Among the highlights of the meeting were key recommendations coming from the distinguished speakers and policy veterans. Dr. Naubahar Sharif, Associate Professor, Hong Kong University of Science and Technology, called for utilizing innovation systems (IS) approach that provides a tool for analyzing country-specific features of the innovation process and guidance for policy formulation, as well as highlights interactions among various actors and the workings of the holistic system rather than the performance of its individual components. He suggested the creation of enabling environment for encouraging technology creativity by: building groups of ingenious and resourceful innovators, rewarding venture capital funding and incentivizing creativity with financial awards. Mr. Umer Sheraz, Senior Policy Analyst, COMSTECH, Islamabad, emphasized that for the innovation policy to be effective, its needs to be based on foresight studies taking into account heterogeneous perspectives of all the stakeholders.

While discussing social, cultural and economic context for developing national innovation strategies, Dr. S.T.K. Naim, Consultant COMSTECH, Islamabad, opined that there can be no standard innovation policy for all the countries. All actors in the social system, as well as priority areas and issues need to be taken into account for devising national innovation policies. Therefore, a National Innovation System should be reflective of local needs and be demand driven. Dr. Imtinan E. Qureshi, Executive Director COMSATS opined that in order to have a successful and long-term nonpartisan ST&I policy, firm commitment and consensus of all the stakeholders must be taken, follow-up mechanism put in place and allocation of optimal funds earmarked.

Prof. Song Chen, Deputy Dean, School of Economics and Management, Tongji University, China similarly reflected on the experiences gained by China viz national innovation systems, suggesting that the developing countries to have stable and open economic policy. Dr. Chen said that the overriding policy objectives should be to strengthen indigenous capabilities in science, technology and innovation and reinforce the absorptive capacities of countries to make good use of knowledge and technology generated.

Dr. Hae Chen Park, Managing Director, H.C. Park & Associates, USA, urged Pakistan to focus on IP volume expansion first and then move to IP Economy by enhancing IP Mining, IP Incubation, IP Pool, IP R&D, IP capital. Mr. Ismail, representative of Intellectual Property Organization, Pakistan, called for the implementation of National IP Strategy and enhancing coordination for Development of University IP Policies.

Dr. Usman Ansar Khan, Patent Agent/Technology Adviser, USA emphasized the importance of IP in small and medium enterprise and called for imparting better awareness to entrepreneurs to serve their business interests, particularly in the western markets. Barrister Farooq Malik said that Promotion and protection of intellectual property spurs economic growth, creates new jobs and industries, and enhances the quality and enjoyment of life.

The closing ceremony of the event took place on October 9, 2013 and was presided over by the Executive Director COMSATS, who opined that the developing countries will have to support and strengthen their intellectual property organizations in order to improve the delivery mechanism of National Innovation Systems. Dr. Qureshi especially appreciated the participation of World Intellectual Property Organization, Switzerland, and Pakistan s Intellectual Property Organization for their inputs of crucial importance towards the theme of the workshop. He encouraged the participants to use the rapport developed during the event for future interactions and consultations.

Prof. Sirimali Fernando, the CEO, COSTI-Sri Lanka, in her vote of thanks on behalf of the invited speakers, expressed pleasure for having the opportunity to participate in a highly informative workshop that comprised excellent technical presentations on various aspects of NIS and IP. She also desired to build on the existing relations between COSTI and COMSATS. Also during the closing ceremony, the Rector CIIT applauded the organizers, speakers and participants in making the event a success. The Advisor (Programmes) COMSATS, Mr. Tajammul Hussain, thanked the collaborating organizations during his concluding remarks and noted that the 2nd and 3rd workshops on the theme will be held in the near future for African and Middle East regions.

National Seminar on Strategies for Enhancing South-South Cooperation in Human Resource Development , September 12, 2013, Islamabad, Pakistan

COMSATS held a seminar on Strategies for Enhancing South-South Cooperation in Human Resource Development , to observe UN Day for South-South Cooperation 2013, to encourage action by governments, organizations, communities, and individuals to actively engage in addressing the issues related to the various aspects of South-South Cooperation. The event took place on 12th September, 2013, at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan.

The seminar brought together nearly 70 participants, including members from UN agencies, government bodies, academia, partner organizations and other stakeholders to promote the cause of South-South Cooperation. Participation of UN Resident Coordinator and UNDP Resident Representative in Pakistan, Mr. Timo Pakkala, as the Chief Guest, and Director of UNESCO in Pakistan, Dr. Kozue Kay Nagata, as the keynote speaker, raised the profile of the event.

The technical programme featured three keynote lectures by distinguished practitioners, and policy makers: Dr. Sania Nishtar, President Heartfile; Prof. Dr. Mukhtar Ahmed, Executive Director Higher Education Commission of Pakistan; and Dr. Vaqar Ahmed, Deputy Executive Director, Sustainable Development Policy Institute, Islamabad.

The presentations made on the occasion by 6 other distinguished speakers covered topics such as: Research, Innovation and Entrepreneurship: Route to Economic Development ; South-South Cooperation in Higher Education ; Contribution of Academia to Human Resource Development in South Asia ; Revisiting South-South Cooperation for Post 2015 MDGs ; South-South Cooperation in Human Resource Development: Opportunities for Pakistan ; and COMSATS Role in Promoting Science-led Sustainable Development through South-South Cooperation .

National Workshops on Repair and Maintenance of Scientific, Engineering Equipment held in Sudan and Ghana (August 2013)

Introduction

Having trained more than 200 scientists, engineers, technicians and academics in repair and maintenance of scientific equipment till 2012, COMSATS capacity-building programme continues to benefit the developing countries. The programme was started in 2004 with a workshop in Sudan, which was followed by similar national events in other developing countries, including Syria, Senegal, Egypt and Tunisia. In 2013, Sudan and Ghana were the beneficiary countries of these trainings, where two five-day national workshops on Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries were held during the month of August 2013. The workshops in Sudan and Ghana were the 6th and 7th of the series of workshops, respectively.

The main objective of this programme is to develop indigenous capacities of the local scientists and institutions in the developing countries for repair and maintenance of their scientific equipment to ensure uninterrupted R&D activities and to promote self-reliance among scientists for repairing and maintaining their scientific equipment, as well as help them save time, effort and finances involved in outsourcing the task.

The modules covered during these two back-to-back events pertained to: Spectrophotometer Systems; Flame Photometer Systems; Dialysis Systems; Patient Monitoring Systems; Gas Chromatographic Systems; HPLC Systems; Spectrum Analyzers; Electron Microscopes; Centrifuges; Laboratory Glassware; Balances; Thermal Equipment; pH Meters & Colorimeters; Binocular Microscopes; as well as laboratory planning and management. The training sessions comprising lectures were complemented by hands-on training in local laboratories.

Among the equipment on which hands-on demonstrations were made during the visits to local labs included: Spectrophotometer; Colorimeter; different kinds of Centrifuges; Leaf Porometers; Digital Balance; Flame Photometer; Conductivity Meter; Autoclave; and Nitrogen Generator.

The highlights of these visits were the introductory seminars on function and operation of the relevant scientific equipment; trouble-shooting of the faulty equipment under the experts direct supervision during the hands-on sessions; and repair of faulty equipment by the participants themselves.

Two experts, Dr. Muhammed Yaqub and Mr. Arif Karim, from Pakistan Council for Scientific and Industrial Research (PCSIR), Pakistan, were mobilized and sponsored by COMSATS to impart training for the workshops. Separate briefs on the two national workshops are given as follows:

Workshop in Sudan (August 18-22, 2013)

Held in collaboration with the Islamic Educational, Scientific and Cultural Organization (ISESCO), the five-day workshop in Sudan commenced on August 18, 2013, in Khartoum. The event was hosted at the premises of the Industrial Research and Consultancy Centre (IRCC), a COMSATS Centre of Excellence in Sudan. Prof. Ahmed El Tayeb, Chairman Board of Directors of IRCC, graced the inaugural ceremony of the workshop as the Chief Guest. The ceremony was attended Dr. Azhari M. Elbadawi, Director General IRCC; Mr. Nisar Ahmad, Senior Assistant Director (Systems), COMSATS; and Engr. El Haq Yousif El Makki, Chairman, Engineering Chamber, Sudan. Also present on the occasion were the senior officials and representatives from the Sudanese Ministries of Science & Communications, and Industry, as well as from other institutions of Sudan, including Measurement and

Calibration Centre, Medical Military Hospital, National Cancer Institute, National Public Health Laboratory, Pharmaland pharmaceuticals, Wad Madani Teaching Hospital (El Gezira State), and Elmek Nimir Hospital.

In his speech, the Chief Guest, Prof. El Tayeb, commended both ISESCO and COMSATS for organizing the much needed national workshop in Sudan and hoped that it would cater to information-exchange among scientists, researchers, technicians, service engineers, and industrialists for enhancing their relevant scientific capacities. In his welcome address earlier, Dr. Elbadawi highlighted the importance of the workshop for Sudanese scientists and technicians for keeping the scientific equipment and instruments operational, and appreciated the efforts made and patronage provided by COMSATS and ISESCO for holding the workshop in Khartoum. In his message, read out by Mr. Nisar Ahmad, Dr. Imtinan Elahi Qureshi, the Executive Director COMSATS, underscored the importance of COMSATS-ISESCO collaboration on the theme and informed that these trainings had in the past successfully trained over 200 scientists, engineers, technicians and academics from COMSATS Member States.

During the workshop, the trainees attended seminars on troubleshooting and repairing of equipment during the 10 technical sessions of the workshop. The knowledge acquired was later practiced in the labs of IRCC; Central Laboratory, Soba; and Military Hospital, Omdurman. The workshop was formally closed by Mr. Ballal Yousaf, Under-Secretary Ministry of Industries, Government of Sudan, in a ceremony held on August 22, 2013.

Workshop in Ghana (August 26-30, 2013)

The 7th workshop on Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries was held soon after the 6th workshop of the series held in Sudan. Following an inaugural session on August 26, 2013, the 18 technical sessions of the workshop continued till the month end. This workshop was hosted by COMSATS Centre of Excellence in Ghana, the

Council for Scientific and Industrial Research (CSIR), at one of its research institutes, the Institute of Industrial Research (IIR) in Accra.

The guests of honour of the inaugural ceremony included, Dr. A. B. Salifu, Director-General CSIR; Mr. Nisar Ahmad, Senior Assistant Director (Systems) COMSATS; Mr. H. A. Obiri, Director IIR; Dr. G. N. Laryea, Acting Deputy-Director IIR; and Mr. E. N. Kotey, Head of Metrology Department, IIR. The ceremony also had a significant participation of senior officials of CSIR and lab technicians belonging to the various institutes of the Council, namely, Building and Road Research Institute (BRRI); Institute of Industrial Research (IIR); Crop Research Institute (CRI); Oil Palm Research Institute (OPRI); Water Research Institute (WRI); Institute of Technological Information (INSTI); Food Research Institute (FRI); Savanna Agri Research Institute (SARI); and Science and Technology Policy Research Institute (STEPRI).

In his welcome remarks, Mr. Obiri informed that the workshop was being held as a follow up of the proposal discussed during the 16th meeting of COMSATS Coordinating Council held at Accra in 2013. In his message, read out by Mr. Nisar, the Executive Director COMSATS, highlighted the need of developing the capacity relating to repair and maintenance of scientific equipment in research institutions, small-scale industries and universities from developing countries.

In his speech, Dr. Salifu noted that Ghana has directly imported many costly instruments worth about twenty-five million dollars from all parts of the world during January 2000 and December 2012, and emphasized the need to develop indigenous skills and capabilities to independently maintain the costly equipment.

In addition to the two trainers mobilized by COMSATS from the Pakistan Council of Scientific and Industrial Research, the workshop had the services of three local resource persons, Mr. Godfried Ampo, Mr. Benjamin S. Addy, and Mr. Gabriel A. Mensah. The lectures by the resource persons were complemented by hands-on training sessions at the local laboratories.

After the five-day training, the workshop concluded on August 30, 2013. The closing ceremony was presided over by Dr. Yahuza Mohammed Gomda, Director Science, Technology and Innovation of the Ministry of Environment, Science, Technology and Innovation, Government of Ghana. In his remarks on the occasion, Dr. Gomda commended COMSATS for organizing the much needed national workshop in Ghana and hoped that it resulted in information-exchange among scientists, researchers, technicians, service engineers, and industrialists for enhancing the existing scientific capacity. Speaking on the occasion, Dr. Salifu also expressed his gratitude to COMSATS and showed his satisfaction over the successful holding of the workshop. He particularly praised the visiting experts for their hard work and knowledge imparted to the participants.

Outcomes of the Training Workshops

The workshops in Sudan and Ghana resulted in training of about 70 participants, including engineers, researchers, technicians and students of various institutions from these countries. These workshops have led to developing indigenous capacity of these countries by training the master-trainers for maintenance of scientific equipment used in the academic and research institutions. The participants under the supervision of trainers successfully made operative a number of expensive and important equipment which were otherwise lying useless for several years.

The immediate encouraging impact of the workshop in Sudan was noted as participants successfully enabled running of the important faulty equipment, which included: Spectrophotometers, Polari-meter, Atomic Absorption Spectrometer, pH Meters, Flame Photometer, Reverse Osmosis Plant, Vacuum Degasser for HPLC and Patient Monitoring system. In a similar effort during the workshop in Ghana, the trainees/participants under the supervision of experts, successfully repaired equipment, including Spectrophotometer, Colorimeter, Refrigerated Centrifuge, Centrifuge, Leaf Porometers, Digital Balance, Flame Photometer, Conductivity Meter, Autoclave and Nitrogen Generator.

Impact of Repair and Maintenance Workshops in Sudan and Ghana			
#	Activity	Workshop in IRCC, Khartoum, Sudan	Workshop in CSIR, Accra, Ghana
1.	No. of Participants Trained	35	30
2.	No. of faulty Equipment used for hands-on training	16	12
3.	No. of Equipment Repaired	09	10
4.	No. of Equipment Diagnosed	05	02
5.	Lectures Delivered	15	14

International Training Workshop on Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries (July 14-23, 2013, Beijing, China)

The International Training Workshop on Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries was successfully held on July 14-23, 2013, in Beijing, China. The workshop was organized by COMSATS Centre of Excellence in China, the International Center for Climate and Environment Sciences (ICCES), with co-sponsorship from Chinese Academy of Sciences (CAS), The World Academy of Sciences (TWAS), the Commission on Science and Technology for Sustainable Development in the South (COMSATS), and the International S&T Cooperation Programme of China.

The event was inaugurated on July 15, 2013. Speaking at the occasion, Mr. Jinghua Cao, Deputy Director General, Bureau of International Cooperation, CAS, China, expressed hope that the event would provide a platform for developing long-term strategies for prediction, detection and monitoring of extreme weather and climate events. The Executive Director COMSATS, in his message read out on the occasion by Mr. Tajammul Hussain, Advisor (Programmes) COMSATS, stated that the increasing frequency and severity of extreme weather conditions and natural disasters are among the most difficult challenges facing mankind at present. He added that in order to understand the relationship of these phenomena with global climate change, one has to rely on meteorological data over a long period of time for statistical and computational analysis using appropriate models for predicting future climate events. He considered the topics covered by the training workshop very relevant for achieving the goals of sustainable development at a global level.

Prof. Jiang Zhu, Deputy Director, IAP, China, thanked CAS for increasing the Institute s budget ten-fold, which would enable it to further enhance its activities and international cooperation. Mr. Zamir Ahmed Awan, Science Counselor, Embassy of Pakistan in China, appreciated the Chinese

government s support for providing opportunities of capacity-building and research collaboration to young scientists of other developing countries. Prof. Lin Zhaohui, Director ICCES, informed that China has, so far, endured a net loss of CNY 400 billion due to different extreme weather and climate events. He stressed the need for developing techniques for detection and monitoring of extreme weather events, as well as strategies for risk management.

The international training workshop comprised the following three technical sessions: (i) Observation of Extreme Events and its Detection; (ii) Monitoring and Prediction of Extreme Events; and (iii) Risk Management of Extreme Events. The workshop featured invited lectures by six subject experts belonging to Australia, China and USA, as well as 11 oral presentations by local and foreign participants. Moreover, the event included scientific visits to the University of Chinese Academy of Sciences (UCAS); Chinese Meteorological Agency (CMA); and ICCES/IAP Supercomputing Facility.

The international workshop was attended by a total of 62 participants, including 29 foreign participants. The countries represented during the workshop include: Bangladesh, Egypt, Ethiopia, China, Iran, India, Malaysia, Mongolia, Nepal, Nigeria, Pakistan, Sri Lanka, Thailand and Uganda. The event facilitated scientific and technological cooperation among the participating research organizations belonging to various developing countries, and enhanced their capacities to timely predict, detect and monitor extreme weather and climate events, as well as to work-out necessary measures for their mitigation at national, regional and international levels.

Travel Grants and Sponsorships

To further build academic and technical capacities of scientists and research scholars of its Member States, COMSATS encourages their participation in international events and academic programmes. The organization facilitates such activities by providing individual or institutional sponsorships for travel, boarding and lodging, etc. In view of the limited financial resources available with the organization, these sponsorships are awarded on priority to scientists/engineers from the Member States that have remaining balance of Annual Membership Contributions kept as a trust fund with COMSATS. COMSATS also provides from its own funds, partial sponsorships for collaborative activities with partner institutions, such as ISESCO and UNESCO.

During 2013, an amount of US$ 79,347 has been spent for making 66 individual and 07 organizational sponsorships towards Bangladesh, China, Egypt, Iran, Jordan, Malaysia, Nepal, Nigeria, Oman, Pakistan, Sri Lanka, Sudan, Syria, Turkey, UAE,

Uganda, and USA. The scientific activities, for which grants were given, took place in China, Egypt, Ghana, Indonesia, Iran, Malaysia, Pakistan, Sudan Tunisia, and Turkey.

4

ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

- COMSATS International Thematic Research Group on Natural Products Sciences 42
- COMSATS International Thematic Research Group on Climate Change and Environmental Protection 45
- COMSATS International Thematic Research Group on Information and Communication Technologies (ICTs) 49
- New International Thematic Research Groups 50

COMSATS International Thematic Research Groups (ITRGs) are clusters of scientific institutions aiming at collaborative research in a particular field of Science and Technology to address specific developmental issues of the 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. 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 Lead Centre.

ACTIVITIES OF COMSATS' INTERNATIONAL THEMATIC RESEARCH GROUPS

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

Second Meeting of ITRG on 'Natural Products Sciences' (June 6, 2013, Turkey)

Prof. Dr. M. Iqbal Choudhary, Director International Center for Chemical and Biological Sciences (ICCBS), Pakistan, and the designated Group Leader of the International Thematic Research Group on Natural Products Sciences , chaired the Second Meeting of the Group on June 6, 2013, in Izmir-Turkey. Co-chaired by Prof. Münir Öztürk, Ege University, Turkey (host institution), the meeting was held on the sidelines of Workshop on Plant Products Chemistry and International Symposium on Medicinal-Aromatic Plants (June 4-7, 2013). The Group met to review its activities during 2011 to 2013 and to strategize the future plans of its joint research project, titled Drug Discovery from Nature for Neglected Diseases . The meeting was attended by 24 participants from Algeria, Indonesia, Iran, Kazakhstan, Libya, Nigeria, Pakistan, Sudan, Tunisia and Turkey.


In his opening remarks on the occasion, Prof. Choudhary welcomed the participants of the meeting and highlighted the objectives of the ITRG and the importance and relevance of the outcomes of its research activities for the developing countries. Speaking on the occasion, Prof. Öztürk emphasized the need of effective collaboration between the Group members belonging to different developing countries.

The matters discussed during the meeting related to Instrument Sharing Programme and Bioassay Screening Programme for member institutions; Screening of plant extracts in antimicrobial and anti-parasitic assays in order to discover new lead compounds against infections; and training visits for scientists and technicians involved in the group research activities. The future activities of the Group and responsibilities of ITRG members were further streamlined, agreement on which was formalized at the end of the meeting through a Memorandum of Understanding signed by 18 members.

During the meeting, the participants made offers of their research facilities and expertise to achieve various tasks of the joint research project. The training requirements were also identified for technical support in connection with phytochemical work; high-resolution techniques for structure elucidation of natural products; and research activities in antimicrobial and anti-insecticidal natural products. Moreover, an open offer was made to all the Group members to avail the facility of bioassay screening of medicinal plants at ICCBS or any other member institution of the Group where such facilities are available.

The ITRG members pledged to build strong working relations through the platform provided by COMSATS and offered their research facilities and expertise to achieve various tasks of the joint project.

Organization of International Workshop on 'Plant Products Chemistry' and International Symposium on 'Medicinal-Aromatic Plants' (4-7 June 2013, Izmir, Turkey)

The International Workshop on Plant Products Chemistry and International Symposium on Medicinal-Aromatic Plants was successfully organized on June 4-7, 2013, at Ege University, Izmir, Turkey, by COMSATS ITRG on Natural Products Sciences and its Lead Centre, ICCBS. The workshop was focused on various aspects of natural product chemistry and its applications for human well-being. During the workshop, the ITRG members from ICCBS delivered lectures on the latest approaches in drug-discovery based on natural products. The event was attended by scientists belonging to six member institutions of the ITRG, out of which, five individuals were provided travel support by COMSATS Secretariat.

Progress made by the Research Group

The progress made by the ITRG with regard to the execution of joint research project is as follows:

Contribution of ITRG members from Sudan: The research group of Sudan, headed by Dr. Waleed Koko (Medicinal and Aromatic Plants Research Institute, National Center for Research, Sudan), has prepared extracts of the 32 medicinal plants that have been submitted to ICCBS for biological screening, which is under process.

Medicinal Plants Extracts Gathered by the Sudanese Members					
No	**Plant name**	**Family**	**Local name**	**Part used**	**Traditional uses**
1	*Adansonia digitata*	Bombacaceae	Tabaldi	Fruit	Diarrhoea and giardia
2	*Calotropis procera*	Asclepiadaceae	Ushar	Stem	Arthritis
3	*Capparis decidua*	Capparidaceae	Tundub	Stem	Inflammation
4	*Cyperus rotundus*	Cyperaceae	Siedaa	Root	
5	*Eucalyptus microtheca*	Myrtaceae	Alban	Leaves	
6	*Fagonia cretica*	Zygophyllaceae	Umshweka	Whole plant	
7	*Grewia tenax*	Liliaceae	Gidem	Fruit	Anemia and malaria
8	*Haplophyllum tuberculatum*	Rutaceae	Haza	Leaves	
9	*Leptadenia arborea*	Asclepiadaceae	Lweais	Leaves	Snake bite
10	*Lepidium sativum*	Brassicaceae	Rashad	Stem	
11	*Nigella sativa*	Ranunculaceae	Kamoon	Stem	Multi inflammations
12	*Solenostemma argel*	Asclepiadaceae	Hargal	Leaves	Abdominal colic
13	*Tamarindus indica*	Caesalpiniaceae	Aradeb	Fruit	Malaria
14	*Tamarix aphylla*	Tamaricaceae	Tarfa	Bark	Hemorrhoids
15	*Cymbopogon proximus*	Poaceae	Mahareb	Whole plant	Anthelmintics and inflammation
16	*Lannea barteri*	Anacardiaceae	Lion	Leaves	
17	*Boswellia papyrifera*	Burseraceae	Alloban	Bark	
18	*Anogeissus leiocarpus*	Combretaceae	Alsahab	Leaves	
19	*Maerua crassifolia*	Capparaceae	Alsarah	Leaves	
20	*Acacia senegal*	Mimosaceae	Alhashab	Gum	Ulcers
21	*Tephrosia apollina*	Papilionaceae	Alaamauga	Whole plant	Antipyretic

Contribution of ITRG members from Turkey: Dr. Khalid ul Rehman and Dr. Münir Öztürk from Ege University, Turkey, submitted the following five plant extracts for 20 bioassay screenings at ICCBS:

Sample Code	Name of Plant
MYUPM01 (Hexane)	*Plantago major*
MYUPM02(MeOH)	*Garcenia atroviridis*
MYUPM03 (MeOH)	*Rhizophora mucronata*
MYUPM04 (MeOH)	*Xylocarpus granatum*
MYUPM05 (MeOH)	*Leptospermum flavescens*

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 antiglycation, anti-leishmanial, and anti-inflammatory activities of medicinal plants were evaluated by using a battery of mechanism-based in-vitro assays. Extracts were also screened against antifungal, insecticidal, phytotoxicity, and brine shrimps lethality assays. On the basis of results, three plants were selected for detailed phytochemical work.

Visit of Prof. Dr. Münir Öztürk (Turkey) to the Lead Centre as a Visiting Scientist

Prof. Münir Öztürk visited ICCBS from November 19, 2013, to January 28, 2014, and delivered an online course entitled Ethnobotany: Medicinal and Aromatic Plants . Moreover, the extracts of Crithmum maritimum from the coastal areas of the Mediterranean and Origanum hypercifolium (an endemic plant from Turkey), were brought to ICCBS for analyses. Isolates of bioactive compounds are under investigation.

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

Second Meeting of ITRG on 'Climate Change and Environmental Protection' (July 21, 2013, Beijing, China)

Prof. Lin Zhaohui, Director International Center for Climate and Environment Sciences (ICCES), China, chaired the second meeting of COMSATS ITRG on Climate Change and Environmental Protection on July 21, 2013, in Beijing, China. The ITRG is undertaking joint research project entitled Characteristics and Mechanism of the Extreme Climate Events under the Climate Change Background , which is being funded by the Ministry of Science and Technology, Government of China. The meeting was attended by 33 participants from China, Egypt, Ethiopia, Iran, Mongolia, Malaysia, Nepal, Nigeria, Pakistan, Sri Lanka, Thailand, Uganda and USA.

During the meeting, the participating ITRG members shared their research progress made since the Group s foundation meeting held in November 2010, as well as discussed challenges being faced. Moreover, the researchers having the capability and interest to join the ITRG as members were identified; research assignments to be undertaken by each ITRG member were distributed; and the commitment by ITRG members to conduct joint

research activities was renewed. The meeting finalized an Action Plan and time-line for the execution of the joint research project, according to which each member committed to: reporting the available datasets to group leader; submitting the data analysis results and proposed working plan; and submitting the periodic progress reports and a comprehensive annual report.

The meeting provided guidance for further research work and laid a foundation for cooperation between ITRG members for execution of the joint research project.

Meteorological Data Collection

Based on the Action Plan discussed and agreed upon by participating ITRG members during the meeting, the observed data from meteorological stations has been collected by various ITRG members, in order to facilitate the analysis of extreme weather and climate events in participating countries. So far, the datasets collected by ITRG members are as follows:

i. Prof. Lin Zhaohui, China: Gridded temperature data with 0.5 degree resolution during 1961-2008, and observed daily precipitation data from 730 meteorological stations during 1961-2010;

ii. Ms. Doljinsuren Myagmar, Mongolia: Monthly mean temperature and precipitation data from 6 meteorological stations during 1981-2010;

iii. Dr. Rijan Bhakta Kayastha, Nepal: Observed data related to daily rainfall in June 2013 from 17 selected meteorological stations;

iv. Mr. Victor Dike, Nigeria: Daily precipitation data during 1981-2010 from 6 meteorological stations;

v. Mr. Keerthi Fonseka, Sri Lanka: Daily precipitation and daily maximum and minimum temperature data during 2003-2013 from 5 meteorological stations;

vi. Dr. Kanoksri, Thailand: Daily rainfall and temperature data during 1961-2010 from 48 meteorological stations; and

vii. Mr. Kituusa Mohammad, Uganda: Observed data related to monthly mean maximum and minimum temperature during 1990-2009 from 5 meteorological stations in Uganda.

Summary of Research Findings

Based on the observed meteorological dataset, the extreme weather and climate events in different Member Countries of COMSATS have been analyzed. Using the observed daily temperature data, changes of hot days in China and its associated

atmospheric circulation has been investigated. It was found that there is an increasing trend in summer mean surface air temperature over most part of China, with maximum increase in eastern Xinjiang, western part of northeast China. The decrease of summer surface air temperature can also be found in Yangtze river basin and Yellow and Huaihe river basin. Furthermore, the number of heat waves is found to have increased in Southern China and Xinjiang during 1961-2008. However, there is no significant trend for the number of hot days in low reaches of yellow river basin and Huaihe river basin, although the number of hot days is relatively higher in 1960s than in other decades.

The extreme rainfall event in June 2013 in Nepal has been analyzed, with the help of 17 meteorological stations provided by Department of Hydrology and Meteorology of Nepal and ERA Interim reanalysis data set provided by ECMWF. It has been found that the record breaking rainfall event on 17th and 18th June 2013 occurred in the western part of Nepal, with maximum 24 hours of rainfall of up to 200 mm. Seti, Mahakali and Karnali rivers of Nepal flooded causing huge damage.

Based on the observation data from Iran, notable long-term natural extreme related to meteorology or hydrometeorology in Iran had been investigated and the related social and economic components were also analyzed. During the recent decade, Iran has been witnessing natural extreme events, such as repeated droughts, heavy floods, unexpected warm or cold weathers, wind/dust, storms and hails. Iran has experienced 17 major droughts during the last 44 years, and the most intensive and prolonged droughts have occurred in the last decade, especially in southern and central parts of Iran. In terms of flood events in the country, more than 6,470 flood events were reported during the last 60 years and more than 42 % of these in the last 10 years. Dust storms have also been reported to have increased in Iran during the recent past.

Preliminary analyses also show that there is a significant increase of the number of occurrences of extreme rainfall events in Nigeria, which is based on 30-year long daily average rainfall series at six synoptic stations in Nigeria. In Pakistan, the extreme weather events in the past have also shown tendency to increase in frequency in future.

International Training Workshop on 'Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries' (July 14-23, 2013, Beijing, China)

In order to enhance the capacity of developing countries, particularly ITRG members, in the field of investigating extreme weather and climate events, the International Training Workshop on Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries was held on 14th to 23rd July 2013, in Beijing, China. The workshop was organized by the Lead Centre of the Group, the International Center for Climate and Environment Sciences (ICCES), with co-sponsorship of Chinese Academy of Sciences (CAS); The World Academy of Sciences (TWAS); COMSATS; and the International S&T Cooperation Programme of China.

The workshop featured 18 invited lectures delivered by six renowned subject experts belonging to Australia, China and USA. The topics of these lectures can be categorized under three themes: (i) Observation of Extreme Events and its Detection; (ii) Monitoring and Prediction of Extreme Events; and (iii) Risk Management of Extreme Events. Moreover, 13 local and foreign participants presented their research progress/results relevant to the theme of the event. The workshop was attended by a total of 62 participants, including 29 foreign participants belonging to 14 developing countries.

Visits and Scientific Collaboration

i. Signing of MoUs:

During its visit to Thailand from November 29th to December 5th, 2013, a delegation of ICCES visited various institutes of Thailand and signed MoUs with Kings Mongkut s University of Technology Thonburi (KMUTT) and Phuket Rajabhat University (PKRU), arriving at a consensus of developing international cooperation in the next 5 years in a variety of areas. The agreements entailed cooperation for conducting collaborative research in climate sciences; applying for international research projects as partners; sharing observed data; and jointly organizing international training workshops.

A Sudanese delegation visited ICCES and participated in a half-day seminar alongwith ICCES members on July 4, 2013. The two parties undertook detailed discussion on the issues of common interest related to extreme weather and environmental protection, and reached a consensus of strengthening cooperation for the same. A senior official of ICCES and head of Sudanese delegation signed an MoU for scientific collaboration in climate and environmental sciences. The two parties outlined future plans for further collaboration, whereby ICCES will provide necessary

scientific and technological support to Sudanese institutes.

ii. Hosting a Nigerian Scientist

Mr. Victor Nnamdi Dike, a PhD student at Imo State University, Nigeria, visited ICCES from July 14 to October 13, 2013. In July 2013, Mr. Dike participated in the International Training Workshop on Extreme Weather and Climate Events , and gave a presentation on Analytical Studies of Daily Rainfall Series in Ilorin-Nigeria: A typical Sub-Sahel location in the session on Observation of Extreme Events and Its Detection . In September 2013, Mr. Dike participated in the 12th CAS-TWAS-WMO Forum (CTWF) International Symposium on Operational Oceanography for Developing Countries , and exchanged his ideas with the participants from 10 different countries.

During his three-month visit to ICCES, Mr. Dike focused on the analytical studies of extreme weather and climate events over Nigeria using meteorological observation dataset. He further investigated the mechanisms responsible for these extreme events, and their potential relationship with extreme events in China.

iii. Visit to Hydro and Agro Informatics Institute (HAII), Ministry of Science and Technology, Thailand

The ICCES delegates visited the Hydro and Agro Informatics Institute (HAII), Ministry of Sciences and Technology, Thailand, which is a member institute of the ITRG on Climate Change and Environmental Protection . Discussions were held on areas of common interest related to environment protection, and presentations made on current research activities on climate change and environmental protection. The two institutions agreed to strengthen scientific collaboration.

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

The COMSATS International Thematic Research Group on Information and Communication Technologies (ICTs) was formally launched on April 19-20, 2011, in Islamabad, Pakistan. The ITRG is being led by one of COMSATS Centres of Excellence in Pakistan, the COMSATS Institute of Information Technology (CIIT). The group has been continuing its research work related to the execution of joint research project entitled, e-Solutions for community using low-cost Wi-Fi , under the lead of Dr.

Sajjad Mohsin, Dean Faculty of Information Sciences & Technology, CIIT. During 2013, the ITRG has been working on different aspects of the joint research project.

New International Thematic Research Groups

COMSATS Secretariat, during 2013, actively corresponded with the Lead Centres of the ITRGs that have not been formally launched. In this regard, letters were sent to the Group Leaders of ITRGs on (i) Materials Science, (ii) Mathematical Modelling, and (iii) Construction Materials, with a request to launch their respective Groups by holding the foundation meetings, as per the parameters approved by 16th Council meeting. It was communicated through the letters that COMSATS will provide travel grants to selected members of the Groups in order to facilitate their participation in the meeting. The President IROST was also consulted to explore the possibility of changing the theme and scope of ITRG on Space Technology and its Applications , keeping in view the fact that previous attempts of launching this group remained unsuccessful. In this connection, IROST s proposal regarding establishment of an ITRG on Renewable Energy , as a replacement of the afore-mentioned group, will be presented during the 17th Coordinating Council meeting to be held in Iran.

Moreover, the 14th Coordinating Council Meeting had provisionally approved the establishment of two new ITRGs having tentative themes of Natural Hazards and Natural Resources . The 15th Council Meeting had provisionally approved the change in the nomenclature of one Group s theme, i.e. from Natural Resources to Mineral Resources , and decided that TÜBİTAK MAM (Turkey) will submit its proposal to COMSATS Headquarters regarding the nomenclature of the two new ITRGs. TÜBİTAK MAM has been mandated by the Council to identify suitable group leaders and members of these prospective Groups. COMSATS Secretariat is coordinating with TÜBİTAK MAM to finalise these nominations.

5

COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

- Cooperation with ISESCO 52
- Cooperation with UNESCO 53
- Cooperation with TWAS 55
- Interaction with Government of Pakistan 55

COMSATS has been endeavouring to expand its group of national and international working partners, in order to have collaboration in Science and Technology for sustainable socio-economic development of the Members States and launch new programmes and activities with its own Centres of Excellence.

COLLABORATIONS WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

Cooperation with ISESCO

ISESCO-COMSATS Joint Cooperation Programme (2013)

The cooperation between COMSATS and the Islamic Educational, Scientific and Cultural Organization (ISESCO) continued during 2013. Under the ISESCO-COMSATS Cooperation Programme, dating back to 2004, joint activities were started in various fields of science and technology of importance to the member countries of both organizations. The ISESCO-COMSATS Partnership Programme-2013 articulated under the framework of ISESCO s Cooperation and Partnership for the year 2013 resulted in successful co-organization of four international S&T capacity-building events (workshops, hands-on trainings and conferences) held in Indonesia, Tunisia, Pakistan and Sudan (section 3). Other major partner organizations for these events were:

- National Nuclear Energy Agency (BATAN), Indonesia;
- COMSATS Institute of Information Technology (CIIT), Pakistan;
- Higher Institute of Technological Studies (ISET) of Nabeul, Tunisia;
- Inter Islamic Network on Information Technology (INIT), Pakistan; and
- Industrial Research and Consultancy Centre (IRCC), Sudan.

The themes of these events have been carefully chosen to meet specific needs of the common Member States of COMSATS and ISESCO, such as maintenance of scientific equipment, Internet Security, nanotechnology and renewable energy. In view of their growing popularity and strong impact, the first two themes have become a regular feature of the cooperation programmes of ISESCO and COMSATS, while the number of events on nanotechnology is gradually increasing. The technical expertise and intellectual inputs for these events were mostly tapped from within COMSATS member countries and affiliated institutions. The number of immediate beneficiaries of these events is about 180. The break down is as follows:

Immediate beneficiaries of ISESCO-COMSATS Cooperation Programme		
Sr#	**Joint Capacity-building Events**	**No. of Participants**
1.	Symposium on 'Nanontechnology & Nano-biotechnology Innovative Applications for Sustainable Green Economy and Climate Change Mitigation', Indonesia	55
2.	3rd International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards' , Tunisia	35
3.	Consultative Regional Workshops on National Innovation Systems and Intellectual Property (South Asia), Pakistan	51
4.	6th National Training Workshop on Repair and Maintenance of Scientific Equipments in Universities, Research Institutions and Small Scale Industries, Sudan	36

ISESCO-COMSATS joint project entitled: Islamic World Science Net (IWSN) web-portal is a permanent feature and part of COMSATS-ICPSR (ISESCO) Joint Annual Action Programme. During 2013, the project was also part of ICPSR (ISESCO)-COMSATS joint Action Plan 2013, under the title Strengthening the Islamic World Science Net (IWSN) and to enhance the Virtual Scientific Thematic Groups . A report on IWSN is included in section 9.

Cooperation with UNESCO

COMSATS proposal for a Sub-regional project, entitled: COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme (Biennium 2012-13) submitted in February 2012, was approved by the Director-General of UNESCO in July 2013. However, the funds could not be released due to delayed financial settlement between UNESCO and Pakistan National Commission for UNESCO (PNCU).

During 2013, efforts were made by COMSATS Secretariat to develop relations with UNESCO Headquarters as well as to strengthen the existing cooperation between the two intergovernmental organizations through the Pakistan National Commission for UNESCO (PNCU) based in Islamabad. In this regard, following meetings were held with the officials of UNESCO and PNCU (the details of which are covered in other sections of this Report):

- Meeting with Mr. Stoyan Bantchev, Chief of UNESCO s Participation Programme Section at UNESCO Headquarters in Paris and Ms. Humaira Zia Mufti, Deputy Permanent Delegate of the Islamic Republic of Pakistan to UNESCO, held at UNESCO Headquarters, Paris (May 2013);
- Meeting with Ms. Amna Imran Khan, Secretary General Pakistan National Commission for UNESCO (PNCU), held in Islamabad (October 2013);
- Meeting with Mr. Stoyan Bantchev, Chief of Participation Programme Section at UNESCO, held at UNESCO Headquarters, Paris (November 2013); and
- Meeting with Prof. Gretchen Kalonji, UNESCO's Assistant Secretary General for Natural Sciences (November 2013).

Among the common points discussed during these meetings were joint capacity-building activities by COMSATS during the past few years, held under UNESCO s Participation Programme, and future role of COMSATS in relation to UNESCO s international activities for promotion of scientific research and education. A mutual understanding and agreement prevailed about the usefulness of the cooperation between the two organizations. As an outcome of these meetings, it was agreed that COMSATS would resubmit the project proposals earlier shared with PNCU, for release of funds in 2014. As a follow up COMSATS has re-submitted the proposal for Sub-regional project, entitled: COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme (Biennium 2014-15) to Pakistan National Commission for UNESCO (PNCU) under UNESCO Participation Programme (2014-2015).

The objective of the proposed programme is to build scientific and technical capacities of common Member Countries of COMSATS and UNESCO in the Asia-Pacific region, utilizing expertise available within COMSATS Network of S&T Centres of Excellence, as well as other collaborating institutions. The proposal includes organization of 4-5 international workshops/seminars/conferences in the common fields of interest to the member countries. In this regard, four of COMSATS Centres of Excellence; BCSIR-Bangladesh, ICCBS-Pakistan, ICCES-China and CIIT-Pakistan, as well as an international partner organization, the Institute for Fundamental Studies (IFS), Sri Lanka, have consented upon hosting these joint events.

In order to strengthen cooperative ties and keep UNESCO aware of COMSATS on-going activities, a representative of UNESCO was invited to attend the 16th meeting of COMSATS Coordinating Council held in May 2013. Mr. Yoslan Nur, UNESCO, Natural Sciences Sector, Science Policy and Sustainable, Development Division, UNESCO, attended the Council meeting.

Cooperation with TWAS

Collaboration between COMSATS and The World Academy of Sciences (TWAS) continued during 2013 for bringing out a series of publications, titled Excellence in Science , based on profiles of COMSATS International S&T Centres of Excellence. Understanding to this effect was reached during the 13th meeting of COMSATS Coordinating Council (Trieste-Italy, May 2010), and formalized, later that year, through a Memorandum of Understanding. The series aims to identify and document the strengths and weaknesses of these institutions in order to put their scientific capacity to a better use in pursuance of South-South and North-South cooperation. Profile of COMSATS Centre of Excellence in Pakistan, the International Center for Chemical and Biological Sciences (ICCBS), was published in October 2011, while the edition on COMSATS Centre of Excellence in Colombia, the Centro Internacional de Fisica (CIF), was published in October 2013.

Correspondence between the two organizations continued till the end of the year to decide the next scientific institution(s) to be covered under the collaboration. A wider range of collaboration proposals were discussed in the meeting between the Executive Directors of COMSATS and TWAS held on the sidelines of UNESCO s World Science Forum (November 2013).

Interaction with Government of Pakistan

Executive Director's briefing on Pakistan's National Science, Technology and Innovation Policy 2012 at a National Conference

The Executive Director COMSATS, Dr. I.E. Qureshi, made a keynote presentation on the Salient Features of Science, Technology and Innovation Policy (STIP) 2012 , at the two-day National Conference on Technology Foresight and Critical Issues related to S&T in Pakistan organized by the Pakistan Council for Science and Technology (PCST), on 25th and 26th June 2013.

Dr. Qureshi elaborated upon the holistic approach adopted for the preparation of STIP-2012 and considered the Action lists recommended in the Policy to be effective guidelines for planning the policy implementation. He urged the Government of Pakistan to show its political will for S&T development through a declaration that the central proposition of the policy, i.e., to spend 1 % of the GDP on R&D in different S&T sectors, will be honoured.

Participation in workshop on 'National Quality Policy' organized by the Ministry of Science and Technology, Government of Pakistan

COMSATS participated in the Consultative Workshop on National Quality Policy (NQP), held on February 26, 2013, in Islamabad, Pakistan. The workshop was organized by the Ministry of Science and Technology (MoST), Government of

Pakistan, under the European Union funded Trade Related Technical Assistance (TRTA-II) Programme, which is being implemented by UNIDO in association with International Trade Centre (ITC) and World Intellectual Property Organization (WIPO).

Mr. Farhan Ansari, Assistant Director (Programmes), COMSATS Secretariat, representing his organization at the workshop took active part in discussions to highlight issues and challenges facing the National Quality Infrastructure (NQI) in the country, and to propose a rational way forward with an aim to formulate National Quality Policy of Pakistan.

The participants of the workshop called for stronger leadership and commitment from NQI institutions; effective exploitation of natural resources available in the country; and enhancement of exports through value-added services. The establishment of endowment funds; enhanced linkages between public-private sectors; strong political will and effective implementation of the policies; and increased commercialization activities were identified as ways to ensure financial sustainability in this sector.

6

INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

- Visit to Sri Lanka (April 2013) 58
- Visit to Ghana (May 2013) 61
- Visits to France (May and November 2013) 63
- Visit to China (July 2013) 66
- Visit to Sudan and Ghana (August 2013) 67
- Visit to Brazil (November 2013) 67
- Visit to Tunisia (December 2013) 69
- Visit to Indonesia (December 2013) 72

The Executive Director and other officials of COMSATS Secretariat undertake international visits with an objective 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 for developing partnerships and cooperation mechanisms.

INTERNATIONAL VISITS OF SECRETARIAT OFFICIALS

Visit to Sri Lanka (April 2013)

The Executive Director COMSATS, Dr. I.E. Qureshi, traveled to Sri Lanka in April 2013, in order to: (a) visit the Industrial Technology Institute (ITI), Sri Lanka, in connection with the Institute s application for induction in COMSATS' Network of Centres of Excellence; and (b) to hold meetings with the senior officials of the Government of Sri Lanka.

Visit to Sri Lankan Focal Point Ministry

The Ministry of Technology, Research and Atomic Energy (MOTR&AE), Democratic Socialist Republic of Sri Lanka, acts as the COMSATS focal point in Sri Lanka, and, by virtue of the same, is represented in COMSATS' International Consultative Committee. In view of COMSATS' policy to foster greater coordination between its Secretariat and the focal points as well as between focal point and the Centre of Excellence within a Member State, the Executive Director COMSATS, Dr. I.E. Qureshi, visited the offices of MOTR&AE on 11th April 2013 and undertook detailed consultations with the honourable Secretary of the Ministry, Mrs. Dhara S. Wijayatilake. Also present in the meeting were Director, Technology & Science Development Division, Mrs. Himali W. K. Athaudage; Chairman Board of Management, Industrial Technology Institute (ITI), Sri Lanka, Prof. Vijaya Kumar; and Head of Chancery, High Commission of Pakistan in Sri Lanka, Mr. Bilal Akram Shah.

Apprising the honourable Secretary about the then upcoming COMSATS' Consultative Committee and 16th

Coordinating Council meetings, the Executive Director informed that Sri Lankan Ministry of Science and Technology was represented in the 1st meeting of the Committee, held in 2009, in Abuja, Nigeria, while the Country s participation in Coordinating Council meetings had been non-existent since there was no Sri Lankan institution affiliated with COMSATS as its Centre of Excellence. The Secretary was informed that the current visit of the Executive Director to Sri Lanka was principally meant to make assessment of ITI as a potential Centre of Excellence to join COMSATS Network. Mrs. Wijayatilake issued an official memo, authorizing Prof. Kumar to represent the Ministry in the 2nd Consultative Committee meeting, in addition to his participation as an invited delegate in the 16th Coordinating Council meeting.

The matters related to increased funding for ITI for enabling the Institute to fully participate in COMSATS South-South cooperation programmes was discussed at length, along with the progress on the approval of Sri Lanka s Annual Membership Contribution for COMSATS. The honourable Secretary expressed her desire to strengthen scientific relations with COMSATS on a multilateral level as well as bilaterally with the Ministry of Science and Technology, Government of Pakistan. MOTR&AE, Sri Lanka, committed to actively pursuing all related financial, legal and administrative matters.

Recounting the support extended by COMSATS to Sri Lankan scientists, the Executive Director informed that 16 scientists were provided travel grants over a period of last three years, who participated in COMSATS capacity-building programmes and trainings in Bangladesh, China, Malaysia, and Pakistan. COMSATS future programmes with Sri Lanka, he noted, would focus upon five areas:

Collaboration, through the participation of ITI in the Coordinating Council;
Educational Opportunities, at COMSATS Institute of Information Technology (CIIT) and Iranian Research Organization for Science and Technology (IROST) for COMSATS member countries;
S&T Capacity-building, by participation of Sri Lankan scientists in COMSATS sponsored symposia/workshops/training programmes;
Joint Research, through ITI and other Sri Lankan institutions participation in International Thematic Research Groups administered by COMSATS; and
Joint Conferences/ Workshops, with the support of COMSATS and relevant S&T organizations in Sri Lanka.

The meeting ended with an optimistic note for stronger scientific ties between COMSATS and its Focal Point in Sri Lanka. COMSATS shield was presented to the honourable Secretary, Ministry of Technology, Research and Atomic Energy, Sri Lanka, by the Executive Director.

Visit to Industrial Technology Institute (ITI), Colombo, Sri Lanka

As a follow-up of the application received from Industrial Technology Institute (ITI), Sri Lanka, for joining COMSATS' Network of International S&T Centres of Excellence, the Executive Director COMSATS, Dr. I.E. Qureshi, visited Industrial Technology Institute (ITI), Colombo, Sri Lanka on April 11-12, 2013.

Welcoming the Executive Director, the Chairman Board of Management ITI, Prof. Vijaya Kumar, expressed the desire to expand ITI s international role through different bilateral and multilateral fora, including COMSATS. He thanked Dr. Qureshi for the invitation to participate in the 16th COMSATS Coordinating Council meeting which was held on May 2-3, 2013, in Accra, Ghana. Prof. Kumar explained that, following the acceptance of ITI in the Network, the Director (CEO) ITI will be nominated as a member of the Coordinating Council. Before inviting the Executive Director COMSATS to visit the laboratories at ITI, the Director ITI, Dr. G.A.S. Premakumara, gave a briefing about the scope of R&D activities and services being provided by the Institute, in the presence of his senior colleagues. Dr. Premakumara informed that ITI was established in April 1998 as a successor of Cylon Institute of Scientific and Industrial Research (CISIR), with a mandate to elevate the technology capacity in Sri Lanka to the level required for rapid industrialization.

It was further noted that a wide range of equipment was available in the Unit for providing services such as: producing genetically modified (GM) organisms and testing GM-products; plant tissue culture; and microbial identification through sequencing of Ribosomal RNA; etc. Other laboratories of ITI that provide services to local industry include: Chemical and Microbiological laboratory, Materials laboratory, Industrial Metrology laboratory, and Electrotechnology laboratory.

The Industrial Technology Institute is centrally located in Colombo with all of its laboratories adjacent to each other. The Institute s strength of permanent staff is 329; seventy per cent of which are employed in technical divisions, while the rest work in support divisions. Out of the total of 79 research officers in both categories of divisions, 56% possess post-graduate qualifications. The visit to ITI laboratories was

conducted by its Director, while the activities of relevant sections were described by Section Heads. A survey of the whole complex gave a strong indication of focused activities, qualified workforce and well-equipped laboratories. All instruments, even if as old as 30 years, were found to be in perfect working condition.

The Institute has a plan to move partially in a new and more spacious complex of laboratories and pilot plants, which is located in Malambe, at about 12 kms from the Institute s present location. The Chairman ITI was kind enough to escort the Executive Director COMSATS to premises of the complex that is under-construction. A brief about the on-going construction activity was given by the former Director ITI, currently the In-charge of the construction project, Dr. A.M. Mubarak. He explained that the administration buildings, as well as the halls of the pilot plants have been completely constructed, while a five-storey building, housing most of the laboratories, has been built only up to three levels. Funds amounting to SLR 70 M (nearly US $ 550,000) have been allocated for the year 2013 to furnish the laboratories and provide essential utilities therein. It is expected that a model laboratory will start functioning in the main building by 2014, while the remaining construction work of the complex will continue.

The plans for the Institute s development and its existing infrastructure, leaves little doubt that ITI is well-placed to play an active role as a Centre of Excellence of COMSATS. In order to explain how COMSATS operates for the development of its Member States, Dr. Qureshi delivered a multimedia presentation to the senior members of the Institute. After a brief summary of COMSATS history, organizational structure and S&T capacity-building programmes conducted in recent years, it was emphasized that ITI can benefit from its Network membership by entering into collaborative projects with other members of the Network. An excellent opportunity for this, it was noted, is provided during the annual meetings of the Coordinating Council.

Visit To Ghana (May 2013)

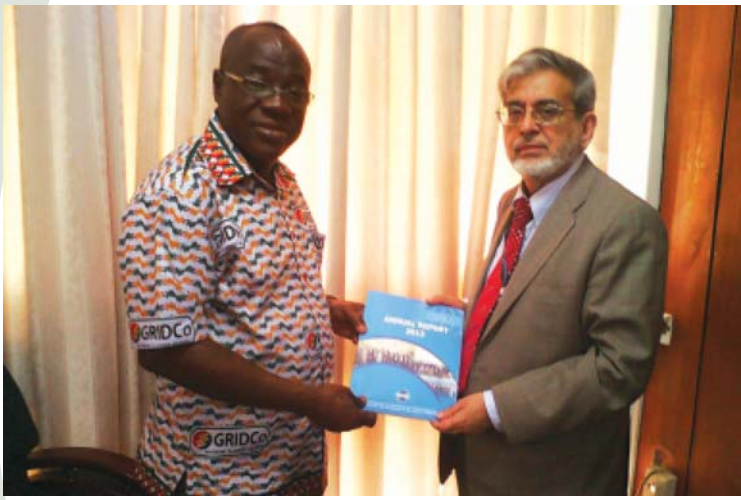
A delegation of COMSATS visited Accra, Ghana during May 2013 in order to participate in the 2nd Consultative Committee and 16th Coordinating Council meetings.

During his visit to Ghana, the Executive Director COMSATS called on H.E. Dr. Joe Oteng-Adjei, Minister for Environment, Science, Technology and Innovation, Government of Ghana, in his office in Accra to discuss the ongoing and future programmes of COMSATS with special reference to Ghana s participation. Held on 3rd May 2013, the meeting was also attended by the Director of one of the research Institutes under Ghana s Council for Scientific and Industrial Research (CSIR), Dr. Eugene Atiemo, representing Director General CSIR and the outgoing Director for Science, Technology and Innovation, Dr. Benony Komla Kortatsi.

The honourable Minister was thanked for hosting the meetings of COMSATS two major organs, and the need was stressed for Ghana to exercise its leadership role as the Chair of COMSATS. Dr. Qureshi showed confidence to the Minister that as the Chairperson of the Commission of COMSATS, the Ghanaian President can entrust COMSATS Secretariat to achieve specific targets of S&T cooperation in Member Countries, especially in Africa.

The Executive Director further informed the honourable Minister that 14 Member States had been represented in the meeting of COMSATS Consultative Committee, whereas 12 Centres of Excellence participated in the Coordinating Council meeting. The representative of 2 prospective Centres also presented the profiles of their Centres as part of the induction process in the Network.

The Minister expressed his delight at the presence of high-level officials and eminent scientists in Accra. While regretting his inability to be present in the joint opening ceremony of the meetings, he assured that the contents of the message read out on his behalf in the ceremony were based on his personal commitment to support COMSATS activities in Ghana. He also expressed keen interest in the International Thematic Research Groups of COMSATS and the educational facilities offered to the students of COMSATS Member Countries at COMSATS Institute of Information Technology, Islamabad.



Among other matters that were agreed upon, during the meeting included:

i) Preparations for a meeting of COMSATS officials with the Chairperson COMSATS;
ii) Closer contacts with COMSATS Secretariat through the office of the relevant Deputy Minister in the Ministry of Environment, Science, Technology and Innovation (MESTI), Ghana;
iii) Consideration of setting up video-conferencing link between MESTI and COMSATS Headquarters;
iv) Review of the possibility of launching the Thematic Group on Construction Materials under the lead centre, Building and Road Research Institute, Ghana;
v) Exploring the possibility of sending an officer of MESTI on secondment in COMSATS Secretariat;
vi) Placement of Ghanaian students in the graduate studies programme of COMSATS Institute of Information Technology.

At the end of the meeting, the Executive Director presented COMSATS Annual Report 2012 and COMSATS Shield to the honourable Minister.

Visits to France (May and November 2013)

During 2013, the Executive Director COMSATS twice visited the UNESCO Headquarters in Paris, France, to strengthen COMSATS existing cooperation with UNESCO and exploring further avenues. Accounts of these visits are as follows.

Visit in May 2013

On 6th May 2013, the Executive Director COMSATS held a meeting with Mr. Stoyan Bantchev, Chief of UNESCO s Participation Programme Section at UNESCO Headquarters in presence of Ms. Humaira Zia Mufti, Deputy Permanent Delegate of the Islamic Republic of Pakistan to UNESCO. Among the major points discussed on the occasion were:

- COMSATS role, as an inter-governmental organization of 21 countries spread across three continents, in promoting South-South Cooperation in Science and Technology;
- Joint capacity-building activities held under UNESCO participation programme by COMSATS during the past few years; and
- Future role of COMSATS in relation to UNESCO s international activities for the promotion of scientific research and education.

Mr. Bantchev was briefed about the 16th Coordinating Council meeting of COMSATS. It was emphasized that the COMSATS' Council meetings, attended by Heads of R&D organizations of Member States, provide a platform for S&T leaders of developing countries to exchange information about their current and future R&D efforts and learn from one another about the best practices and possibilities of cooperation. Dr. Qureshi thanked UNESCO for sending an observer to participate in the Accra meeting. The UNESCO representative, Mr. Yoslan Nur, had made a multimedia presentation during the Council meeting outlining the role of ST&I Policy for Sustainable Development from UNESCO s perspective, for the benefit of the Council Members. He noted that learning about the scientific achievements of COMSATS' Network of Centres of Excellence was a highly informative experience for Mr. Nur, which he promised to report to relevant UNESCO officials.

Mr. Bantchev noted that COMSATS previous engagements with UNESCO in its participation programme through the offices of Pakistan National Commission for UNESCO (PNCU) in Islamabad have been very productive. With respect to the biennium 2012-13 cooperative agreement, for which the approval of COMSATS' proposal is still pending, he cited UNESCO s budgetary constraints and some

pending issues with PNCU. Nevertheless, he assured the Executive Director that COMSATS' project will be accorded high priority on the recommendation of Deputy Permanent Delegate of Pakistan, Ms. Humaira Mufti. In her remarks, Ms. Mufti explained the position of PNCU and stressed the fact that UNESCO s support for COMSATS-administered participation programme has a multiplicative effect, since COMSATS Headquarters as well as COMSATS Centres of Excellence make substantial contributions towards the scientific events credited to UNESCO.

Dr. Qureshi expressed his desire to create deeper institutional relations between COMSATS and UNESCO. He hoped that UNESCO will continue to participate in the meetings of COMSATS' statutory bodies, and likewise COMSATS would also be invited in UNESCO s meetings as observer organization.

Earlier that day, Dr. Qureshi had also called on the Ambassador of Pakistan and Permanent Delegate of Pakistan to UNESCO, H.E. Mr. Ghalib Iqbal, who welcomed the Executive Director in his office and showed keen interest in COMSATS activities aimed at fostering scientific cooperation among its Member countries. He assured Dr. Qureshi that the office of the Permanent Delegate to UNESCO will extend full cooperation in strengthening COMSATS' ties with UNESCO. He advised the COMSATS administration to send information material about the organization s ongoing programmes to the relevant UNESCO division, with a copy to the Embassy of Pakistan.

Visit in November 2013

On invitation from the Government of Pakistan to join its delegation for the 37th General Conference of UNESCO, the Executive Director COMSATS, Dr. I. E. Qureshi, visited UNESCO Headquarters in Paris on November 17-22, 2013. Apart from attending the joint meetings of UNESCO's Commissions held on 18th and 19th November, he participated in the symposium on 'Integrated Approaches to Science and Engineering for Sustainable Development', organized jointly by the United Nations University (UNU) and the International Council for Science (ICSU). The symposium was inaugurated by the UNESCO Director General, Ms. Irina Bokova, who was earlier elected by the General Conference for the second term of four years on 12th November 2013.

During his visit to Paris, Dr. Qureshi also held bilateral meetings with the senior officials of UNESCO to strengthen UNESCO-COMSATS partnership. The meeting with Ms. Lidia Brito, Director of the Division of Science Policy and Capacity-Building, was aimed at exploring the possibility of her joining the COMSATS' Panel of Experts on Science, Technology and Innovation (ST&I) Policy that was created with an objective to provide free consultancy to the developing countries in reviewing/formulating their ST&I policies. Dr. Qureshi briefed her about the current programmes of COMSATS and its future initiatives, such as seminars and symposia on cutting-edge technologies; post-graduate scholarships for students from member countries; hands-on workshops on Internet security and repair and maintenance of scientific equipment; International Thematic Research

Groups, and Distinguished Professorship Scheme. Ms. Brito was kind enough to consider the offer of panel membership favourably and expressed her desire to further explore practical implications resulting from her membership.

The meeting with Mr. Bantchev during this visit was focused on the funding status of approved project for 2012-13 submitted last year by COMSATS through Pakistan National Commission for UNESCO (PNCU). In view of the unresolved administrative issues with PNCU in this regard, it was learnt that the release of funds would not be possible this year. After due consideration of the position of COMSATS, it was agreed that COMSATS would resubmit its project with the same scope and beneficiary countries for funding during 2014-15. In view of the fact that the project was evaluated and approved during the biennium 2012-13, its chances for re-approval are considerably high.

Mr. Bantchev was also briefed on COMSATS' activities during the last few months. He appreciated the efforts being made by COMSATS in strengthening S&T capacity in its Member States and assured UNESCO's support in accordance with its programmes and priorities. He also appreciated the personal commitment of the Executive Director COMSATS to make the work of his organization more widely recognized. The meeting ended with a note of mutual good wishes for the laudable work of COMSATS and UNESCO within their respective areas of competence and scopes of activities.

Another bilateral meeting of considerable significance was held on November 19, 2013, between the Executive Director COMSATS and the UNESCO's Assistant Secretary General for Natural Sciences, Prof. Gretchen Kalonji. Various topics were discussed with a view to find a common ground for cooperation between the two organizations. Recalling the history of COMSATS creation in 1994 at the behest of the Pakistani Nobel Laureate, Prof. Abdus Salam, Dr. Qureshi recounted the successful operations of COMSATS over a period of eighteen years, in pursuit of its primary mission of South-South cooperation in different fields of S&T that are directly relevant to socio-economic development. He emphasized that, in spite of its limited budget and small membership, the organization has several unique features, such as a vibrant network of eighteen Centres of Excellence in four continents; its own Internet service provider subsidiary; and an attached higher education institution, the COMSATS Institute of Information Technology (CIIT), having degree awarding status. CIIT, offers 86 degree programmes and has with more than 2,295 faculty members, is a rich resource of manpower well-equipped for advancing COMSATS' objectives. The impact of COMSATS' new initiative to establish multi-national research groups was highlighted, along with the highly acclaimed serial workshops on repair and maintenance of scientific equipment in the universities and R&D organizations of developing countries.

Prof. Kalonji appreciated the commendable work of COMSATS, which she believed is in line with the programmes of UNESCO and its affiliated centres. It was agreed that the modalities of organizational relations between COMSATS and UNESCO will be further explored with the aim to sign a Memorandum of Understanding to this effect, if approved by relevant competent authorities of the two organizations.

Visit to China (July 2013)

A two-member delegation of COMSATS, comprising Mr. Tajammul Hussain, Advisor (Programmes), and Mr. Farhan Ansari, Assistant Director (Programmes), visited Beijing-China in July 2013, in order to co-organize the International Training Workshop on Extreme Weather and Climate Events: Detection, Monitoring, Prediction and Risk Management for Developing Countries (July 14-23, 2013) and the 2nd Meeting of COMSATS International Thematic Research Group (ITRG) on Climate Change and Environmental Protection (July 21, 2013).

During their visit, the delegation also called on the Ambassador of Pakistan to China, H.E. Mr. Masood Khalid. Mr. Hussain informed the Ambassador about the ongoing collaborative activities between COMSATS and its Centre of Excellence in China, the International Centre for Climate and Environment Sciences (ICCES), including the joint organization of the international training workshop and the 2nd Meeting of COMSATS ITRG. A document, comprising details of collaboration between COMSATS and ICCES, was also handed over to the Ambassador.

The Ambassador was further informed that the ITRG on Climate Change and Environmental Protection , which has membership of researchers and scientists belonging to various developing countries, is being led by ICCES-China. The Advisor (Programmes) shared the outcomes of the Group s second meeting, which included finalization of an Action Plan for execution of joint research project entitled "Characteristics and Mechanism of the Extreme Climate Events under the Climate Change Background". It was informed that the ITRG members share their expertise and laboratory facilities in order to ensure the successful implementation of the joint research project.

The Advisor (Programmes) informed the Ambassador that COMSATS wishes to sign a Memorandum of Understanding (MoU) with the Ministry of Science and Technology (MoST), China, for participation in the International Training Programme of MoST, China, by jointly organizing 1-3 scientific capacity-building events every year. In this regard, COMSATS may provide travel grants to selected participants from COMSATS Member Countries, whereas MoST, China, may cover local hospitality of these participants. The Ambassador was also informed about the collaborative activities between ICCES and meteorology department of COMSATS Institute of Information Technology (CIIT), Pakistan, whereby ICCES has agreed to accept two faculty members of CIIT for PhD studies, each year. Mr. Hussain also highlighted the benefits of membership to COMSATS and informed the Ambassador about scholarship offers made by CIIT-Pakistan and IROST-Iran to students/researchers from COMSATS Member Countries.

The Ambassador appreciated collaborative activities between COMSATS and ICCES, and considered it important to strengthen collaborative linkages between COMSATS and MoST-China by reaching an agreement through an MoU. The Ambassador agreed to follow-up this matter with the senior officials of MoST, China.

The meeting concluded with the general understanding that COMSATS collaborative activities with China are very important for achieving the organization s over-all objectives.

Visit to Sudan and Ghana (August 2013)

Mr. Nisar Ahmad, Senior Assistant Director (Systems), COMSATS, visited Sudan and Ghana during August 2013 in order to co-organize the 6th and the 7th National Workshop on Repair and Maintenance of Scientific Engineering Equipments in Universities, Research Institutions and Small Scale Industries repair and maintenance in collaboration with the host institutions (page 33).

On the sidelines of the workshop in Ghana, some useful discussions were held with Dr. Yahuza Mohammed Gomda, Director Science Technology and Innovation, Ministry of Environment, Science, Technology and Innovation, Ghana; Dr. Eugene Atiemo, Director of Building & Road Research Institute, Council for Scientific and Industrial Research (CSIR); Dr. Rose Emma Mamas Entsua-Mensah, Deputy Director-General, CSIR; and Mr. E.N. Kotey, Head, Energy Technologies Programme, CSIR.

During the meetings with Dr. Gomda and Dr. Entsua-Mensah, Mr. Ahmad gave a briefing about COMSATS activities with special focus on its international programmes. The objectives and expected outcomes of the ongoing repair and maintenance workshop were also shared. In another meeting, Dr. Entsua-Mensah and Mr. Kotey showed keen interest in COMSATS Programmes. Dr. Entsua-Mensah appreciated COMSATS efforts to build the technical capacities of its Member Countries through subject specialized workshops and hoped to have more such activities by COMSATS in Ghana. She also showed interest to further strengthening COMSATS-CSIR cooperation in other fields.

Apart from the successful holding of the National Workshop, the meetings and discussions on matters of mutual interest held during the visit served as means to establish linkages with scientific community in Ghana. Also, on-site discussions on repair and maintenance issues of scientific equipment were made with the participating engineers, technicians, and staff of CSIR.

Visit to Brazil (November 2013)

On November 25-27, 2013, the Executive Director COMSATS, Dr. I. E. Qureshi, along with the Dean, Research, Innovation and Commercialization, COMSATS Institute of Information Technology (CIIT), Dr. Raheel Qamar, participated in the sixth edition of UNESCO s World Science Forum held in Rio de Janeiro, Brazil. More than 400 scientists, educationists, policy-makers, leaders of research bodies, international organizations, industries and civil society representatives from over 100 countries were present at this biennial event that was jointly organized by the Brazilian and Hungarian Academies of Sciences. The forum has been held in Budapest since its inception, however, this year the format

was changed and Rio de Janeiro was chosen as the venue of the meeting. The World Science Forum will be held again in Budapest in 2015, followed by Amman, Jordan, in 2017.

Deliberations of the event, that spread over three days, consisted of several important topics and discussions pertinent to the social, economic and environmental issues being faced by nations across the globe, as well as the scientific and technical solutions to address these issues. Presentations were made by eminent scholars on a number of important topics spanning over science and sustainability. Intensive debate by the delegates following each presentation led to a formal declaration encompassing mainly: global harmony; equality through education and promotion of science and innovation; ethics in research; improved coordination of governments with various sectors; and developing mechanisms for the funding of science. Intensive debate by the delegates following each presentation led to a formal declaration with 5 main recommendations:

i. Harmonizing of global and national efforts towards promotion of science;
ii. Reducing inequalities through education and promotion of global and sustainable science and innovation;
iii. Conducting responsible and ethical research and innovation;
iv. Engaging in improved dialogue with governments, society, industry and media on sustainability issues; and
v. Devising sustainable mechanisms for the funding of science.

Apart from participation in the Forum, the objective of the visit was also to hold meetings with the high officials of prominent Brazilian institutions to discuss opportunities of cooperation in the field of science and technology, participation in programmes and projects of COMSATS, and to extend the offer of COMSATS Membership to the Government of Brazil. During his three-day visit to Brazil, a number of side-line meetings were held by Dr. Qureshi with delegates from different Member States and non-Member States of COMSATS, as well as international organizations like TWAS and UNESCO. Dr. Qureshi held a meeting with the former Director-General, Embrapa Agrobiologia, Dr. Eduardo Compello. During the meeting, the two officials, inter alia, discussed the role that Embrapa Agrobiologia is playing in the development of environment friendly agricultural techniques and practices in

Brazil. Dr. Qureshi requested that the incoming Director General of EMBRAPA Agrobiologia may be throughly briefed about COMSATS programmes and activities.

Another important meeting of the Executive Director COMSATS was held with Dr. Carlos A. Nobre, National Secretary, Brazilian Ministry of Science, Technology and Innovation (MOSTI). During the meeting, Dr. Qureshi highlighted the role and activities of COMSATS in creating links among the scientific institutions of the developing countries. Dr. Nobre, who is a reputed environmental scientist, expressed keen interest in COMSATS programmes, especially its International Thematic Research Groups. The Executive Director also handed over to Dr. Nobre the copies of previous correspondence regarding the offer of COMSATS membership to Brazil. The two officials also discussed the possible induction of a second Center of Excellence from Brazil (as one of the MOSTI organizations) in COMSATS Network. Later, the Executive Director COMSATS held a meeting with member of COMSATS Technical Advisory Committee, Prof. Glaucius Oliva, President, National Council for Scientific and Technological Development (CNPq), Brazilian Ministry of Science, Technology and Innovation. During his stay in Brazil, Dr. Qureshi also met Dr. Adil I. Matloob, Advisor, Ministry of Science and Technology, Government of Iraq; Prof. Bai Chunli, President of TWAS and President of Chinese Academy of Sciences; Prof. Romain Murenzi, Executive Director TWAS; Mr. Mourad Ahmia, Executive Secretary of the Group of 77; and Prof. M.H.A. Hassan, Life-time Member of COMSATS Coordinating Council. Matters of mutual interest were discussed with all officials, which, inter alia, included:

i. Brazil s membership of COMSATS and possible induction of a second Centre of Excellence from Brazil (one of the MOSTI organizations) in COMSATS Network of International S&T Centres of Excellence;
ii. Appointment of the members of COMSATS Advisory Panel of Experts for Science, Technology and Innovation Policy for Member States;
iii. Prof. Oliva s membership of COMSATS Technical Advisory Committee;
iv. China s participation in COMSATS scientific activities;
v. COMSATS possible role in 'Science Diplomacy' initiative of TWAS;
vi. COMSATS support for TWAS programmes;
vii. The revival of COSTIS and COSTIS COMSA TS future cooperation;
viii. COMSATS-TWAS ongoing cooperation for publishing profiles of scientific institutions Excellence in Science.

In addition, goodwill messages were exchanged with a large number of delegates from different countries, representatives of international organizations and academies of sciences.

Visit to Tunisia (December 2013)

In December 2013, COMSATS officials visited Tunisia to participate in the Workshop on Internet Security; Visit the Water Research and Technologies Centre (CERTE) for Technical Evaluation as a candidate Centre of Excellence and hold meetings with important Tunisian officials.

During 9th to 12th December 2013, the Executive Director COMSATS and Advisor (Programmes) COMSATS held a number of meetings with Tunisian authorities and

Heads of scientific organizations. The objective of these consultations was to prepare a roadmap for closer cooperation between Tunisia and COMSATS; in particular, to explore the possibility of inducting a Tunisian R&D organization in the COMSATS Network of International S&T Centres of Excellence.

On 10th December, COMSATS delegation held detailed discussions with the Director General CERTE and his senior colleagues at the Centre. The presentations on the organizational structure and technical activities of COMSATS and CERTE were made by Executive Director COMSATS and Director General CERTE, respectively. It was learnt that CERTE has extensive research activities in the fields of geo-sources of water, natural water purification and waste water treatment. The Centre has over 300 staff and students with 78 researchers. During the period 2010-12, the Centre produced 248 publications, 30 Ph.Ds and 7 patents in water related technologies. The Director General CERTE, Prof. Mohamed Ben Youssef, and his senior colleague, Prof. Mohamed Ben Amor, then conducted a tour of the laboratories, which were found to be well-equipped with latest instruments and teams of researchers engaged in laboratory work. The Advisor (Programmes) COMSATS, Mr. Tajammul Hussain, explained to CERTE officials about the process of getting affiliation with COMSATS and the benefits of joining its Network of International S&T Centres of Excellence. He handed over the necessary application documents to the Director General and hoped that the application of membership will be received soon so that the matter could be discussed in the forthcoming Coordinating Council meeting of COMSATS in Tehran in May 2014.

In a meeting held with the honourable Minister for Higher Education and Scientific Research, H.E. Dr. Moncef Ben Salem, at his office in Tunis on 11th December, the Executive Director apprised the Minister about the past interactions of COMSATS with Tunisia and explained various benefits that Tunisian scientific community can derive from the organization. The Minister was also briefed about the visit of COMSATS' delegation to the Water Research and Technologies Centre (CERTE) in the techno park of Borg-Cedria in Tunis on 10th December. The Minister was informed that Director General CERTE has shown interest in getting COMSATS' affiliation for his institution as one of its Centres of Excellence.

In his remarks, the Minister thanked COMSATS for organizing a scientific workshop in Tunisia in 2012, and especially the ongoing workshop on Internet Security. He expressed his willingness to give approval of the Ministry to let CERTE apply for membership of COMSATS' Network. However, he showed his personal conviction that COMSATS is an effective platform for delivering substantial benefits to Tunisia and agreed to record his recommendation for membership payments in future.

Other engagements of COMSATS delegation on 9th and 12th of December involved interactions with the authorities of the Higher Institute of Technological Studies (ISET) at Nabeul, which was hosting the then on-going COMSATS-ISESCO-INIT International Workshop on Internet Security. In a meeting with the Director of the Institute, Dr. Fouad Landolsi, the possibility of signing a MoU for organizing future joint activities was considered. This proposal was further discussed with the Director General of the Institute, Mr. Ali Gharsallah on 12th December. In principle, both the Director General ISET and Executive Director COMSATS showed no reservations on this proposal. In order to work out the details of the MoU, further consultations will be made through e-mail by the Advisor (Programmes) COMSATS, and the Director ISET. A visit to various workshops, teaching laboratories and library was also conducted in order to learn about the strengths of training programmes of ISET in different departments of the Centre. It was learnt that ISET awards degrees in Mechanical, Electrical and Civil engineering, as well as in Information Technology and Management Sciences. On the occasion of the meetings with ISET officials, it was agreed that COMSATS Institute of Information Technology (CIIT) and ISET would consider the possibility of cooperation in teaching and research programmes. In particular, the Information Technology (IT) department of ISET would look into the possibility of joining COMSATS International Thematic Research Group (ITRG) on ICTs.

The visit of COMSATS' delegation and meetings with Tunisian scientific community created a strong good-will towards COMSATS and earned appreciation for its programmes aimed at promoting South-South cooperation in the domain of Science & Technology. Also, commitments were made by Tunisian scientists and officials to strengthen relations with COMSATS and to participate actively in its future activities.

Visit to Indonesia (December 2013)

On December 17-18, 2013, the International Symposium on Nanotechnology & Nanobiotechnology Innovative Applications for Sustainable Green Economy and Climate Change Mitigation was held in Serpong, Indonesia. Mr. Amir Ijaz, Assistant Director COMSATS visited Indonesia in order to represent COMSATS in the symposium.

7

OTHER IMPORTANT MEETINGS

- Meetings with the Secretary General, Pakistan National Commission for UNESCO (October 10, 2013, Islamabad) 74
- Meeting with the Head of ISESCO Centre for Promotion of Scientific Research (October 8, 2013, Islamabad) 75
- Meeting with the Minister for Higher Education & Scientific Research, Republic of the Sudan (September 25, 2013, Islamabad) 76
- Meeting with the Minister for Science and Technology, Government of Pakistan (July 16, 2013, Islamabad) 78
- Meeting with the Ambassadors of COMSATS' Member States in Islamabad (March 28, 2013) 80
- Meeting with the High Commissioner of Mauritius to Pakistan (March 28, 2013, Islamabad) 80
- Meeting with the Foreign Secretary, Government of Pakistan (March 22, 2013, Islamabad) 81
- Meeting with the Ambassador of Sudan to Islamabad (January 31, 2013) 82

COMSATS officials hold meetings with relevant officials in COMSATS Member States with a view to ensure a smooth operation of COMSATS projects and programmes, as well as its collaborative activities. 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 from partner organizations.

OTHER IMPORTANT MEETINGS

Meetings with the Secretary General, Pakistan National Commission for UNESCO (October 10, 2013, Islamabad)

On October 10, 2013, the Executive Director COMSATS called on Ms. Amina Imran Khan, Secretary General, Pakistan National Commission for UNESCO (PNCU), at her office in Islamabad. The Executive Director was accompanied by Advisor (Programmes), and Ms. Huma Balouch, Assistant Director (Programmes), COMSATS. Mr. Muhammad Dawood, Deputy Secretary General (PNCU) and Mrs. Sajida Nasreen, Assistant Secretary General (PNCU), were also present during the meeting.

Among the major points discussed on the occasion were: (i) the then upcoming visit of Executive Director COMSATS to UNESCO Headquarters, Paris, to attend the 37th session of General Conference of UNESCO (November 5-20, 2013) as a member of delegation from Pakistan; (ii) proposal for establishing UNESCO Category-II Water Research Centre at CIIT Wah Campus; (iii) organization of IYCr South Asia Summit Meeting on Vistas in Structural Chemistry, to commemorate the International Year of Crystallography-2014, at International Center for Chemical and Biological Sciences (ICCBS), Karachi, Pakistan; and (iv) COMSATS contribution to UNESCO s participation programme during the past few years and possible collaboration for the promotion of scientific research and education. The Secretary General was requested to pursue with UNESCO Headquarters the release of allocated funds for the approved project COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme (Biennium 2012-13).

The Secretary-General PNCU was also briefed on the joint activities of COMSATS and PNCU during the last few years. Ms. Khan appreciated COMSATS for its contributions towards strengthening S&T capacity in its Member States and assured her support for cooperation between PNCU and COMSATS.

Earlier, on January 23, 2013, the Executive Director COMSATS had also paid a visit to the office of the Secretary General of Pakistan National Commission for UNESCO (PNCU), which was then being held by Mr. Iftikhar Hussain. The Deputy Secretary General (PNCU) and the Assistant Secretary General, were also present on the occasion.

The aim of the meeting was to follow-up on COMSATS proposal for a Sub-regional project, entitled: COMSATS-UNESCO South-South Regional (Asia-Pacific) Technical Cooperation Programme (Biennium 2012-13). The Executive Director COMSATS made a short introduction about COMSATS, provided an overview of its programmes and activities in the past, as well as held discussions on the collaboration between COMSATS and PNCU.

Meeting with the Head of ISESCO Centre for Promotion of Scientific Research (October 8, 2013, Islamabad)

During October 2013, Mrs. Wafaa El Alami, Head of ISESCO Centre for Promotion of Scientific Research (ICPSR), visited Pakistan for participating in the COMSATS-ISESCO Regional Consultative Workshop on National Innovation Systems (NIS) and Intellectual Property (IP), held in Islamabad, from October 7-9, 2013. The Executive Director COMSATS held a meeting with Mrs. Alami, on October 08, 2013 at COMSATS Secretariat to discuss cooperation programme between COMSATS and ICPSR. The meeting was also attended by other COMSATS officials, namely, Mr. Tajammul Hussain, Advisor (Programmes); Mr. Nisar Ahmad, Sr. Assistant Director (Systems); and Mr. Farhan Ansari, Assistant Director (Programmes).

During the meeting, the ongoing cooperation programmes and possibilities to further strengthen cooperation in future between COMSATS and the ISESCO Centre were discussed. While evaluating COMSATS-ISESCO Cooperation Programme for 2013, it was noted that two joint capacity-building events had been successfully held in the areas of Repair and Maintenance of Scientific Engineering Equipment (August 18-22, 2013,Sudan) and National Innovation System and Intellectual Property (October 7-9, 2013, Pakistan), whereas two more activities on the topics of Internet Security and Nanotechnology & Nano-biotechnology were in the pipeline. These events were later held in Tunisia and Indonesia (Section 3).

A regular feature of the Cooperation Programme with ICPSR is Strengthening of the Islamic World Science Net (IWSN) in terms of the web-portal s content and layout. All the features of IWSN web-portal were discussed in accordance with the Action Plan 2013. The French version of the web-portal, it was noted, had been completed,

whereas an Arabic version was planned to be developed during 2014. Other matters related to enhancing the efficacy of the Virtual Scientific Thematic Groups (VSTGs) of the web-portal were also discussed during the meeting.

In order to further strengthen the ongoing successful cooperation among the two organizations, COMSATS proposal on COMSATS-ISESCO Cooperation Programme for the biennium 2014-15 was also discussed and finalized. The proposal was handed over to the Head of ICPSR for consideration.

Meeting with the Minister for Higher Education & Scientific Research, Republic of the Sudan (September 25, 2013, Islamabad)

COMSATS desire to deepen relations with Sudan and appreciation of the continued support of the Sudanese Embassy towards COMSATS activities in Sudan, were communicated to the Minister for Higher Education & Scientific Research, Republic of the Sudan, H.E. Prof. Khamis Kajo Kunda, during his visit to COMSATS Secretariat on September 25, 2013. He was visiting Islamabad as the Head of Sudanese delegation for the Vice Chancellors Forum 2013, co-organized by COMSATS Institute of Information Technology (CIIT) on September 23-24, 2014. Prof. Kunda was accompanied by the Sudanese Ambassador to Pakistan, H.E. Mr. El Shafie Mohamed Ahmed.

The Executive Director briefed the Minister on COMSATS international role, S&T cooperation programmes, and research & training activities for its Member Countries, including Sudan. Introducing COMSATS as a proponent of science and technology for sustainable development in the South, Dr. Qureshi noted that it was late Prof. Abdus Salam, a Nobel laureate from Pakistan, who envisioned the establishment of COMSATS as a high level forum comprising Heads of State and Government. In his briefing, Dr. Qureshi also highlighted COMSATS current leadership, organizational structure, membership, synopsis of flagship projects, scope of international programmes and activities, channels used for outreach, as well as the financial status of the organization vis-à-vis member countries voluntary contributions. While highlighting various working organs of COMSATS the Commission, Coordinating Council, and Consultative Committee he noted that these organs provide the organization with the necessary means to seek and maintain political patronage, government support, international oversight, and technical cooperation.

The international collaborations, education & training and capacity-building opportunities in the member countries created by COMSATS over the years that directly benefited policy-makers, researchers, scientists and students in Member States were recounted to the visiting dignitaries. The Minister was informed about the

National Workshop on Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries , held in Khartoum in August 2013 (Page 33). The workshop that provided technical training to over 35 Sudanese engineers, researchers and technicians from all over the country, it was noted, represents a good example of the benefits of South-South cooperation through the efforts of COMSATS.

Sudan s participation in COMSATS activities and international programmes was also discussed. It was brought to the Minister s notice that since its induction in COMSATS Network, Industrial Research and Consultancy Centre (IRCC), Sudan, has participated in all the 7 international meetings of COMSATS Coordinating Council held in different parts of the world that provided unique opportunity for knowledge sharing and scientific exchanges at the level of Heads of Centres of Excellence. It was further noted that high officials of Sudan have also participated in the two Consultative Committee meetings of COMSATS held in Abuja-Nigeria (2009) and Accra-Ghana (2013), whereby the official stance of the Member States/Governments on S&T-based development were shared to help the organization strategically realign its international programmes in accordance with developmental needs of the Member States and thus help achieve the organization s goals. The Executive Director also recalled the discussion on avenues of cooperation in his meetings held with a three-member country delegation of Sudan that participated in the 2nd Commission Meeting of COMSATS in Islamabad, in April 2012, as well as with the State Minister for Science and Communications during his visit to Sudan in November the same year.

The areas outlined during the meeting for future cooperation between Sudanese institutions and COMSATS included: education; training; joint-research; international S&T events; and international linkages. Dr. Qureshi explained various ongoing activities of COMSATS in each of the areas, such as COMSATS scholarship and fellowship opportunities at its Centres of Excellence. He informed that currently two Sudanese students are undertaking their MS degrees from COMSATS Institute of Information Technology, and five applications from Sudanese researchers seeking Ph.D scholarships had been forwarded to COMSATS Centre of Excellence in Iran, the Iranian Research Organization for Science and Technology (IROST).

COMSATS offer to involve scientific institutions of Member Countries in thematic research groups was reiterated to the visiting Sudanese Minister and Ambassador. It was noted that three scientific institutions of Sudan, IRCC, National Center for Research (NCR), and Sudan Meteorological Authority (SMA), are actively involved in the on-going research activities of the two International Thematic Research Groups

(ITRGs) of COMSATS on Natural Products Sciences , and 'Climate Change and Environmental Protection'. The other areas of cooperation highlighted by Dr. Qureshi included, COMSATS capacity-building and training activities in its Member States, active participation in its meetings, as well as scholarly contributions to COMSATS various publications, especially its bimonthly newsletter and biannual scientific journal, Science Vision.

Prof. Kunda stated that the process of development can be accelerated through South-South cooperation through all available platforms including COMSATS. Sharing his views on meeting the developmental needs of his country, he stressed that the only way forward for Sudan is to focus its efforts on higher education. He informed that his Ministry is committed towards making all-out efforts to providing necessary facilities at the higher education institutions in the country for conducting relevant scientific research and creating international linkages.

The Minister appreciated the role of COMSATS Network of Centres of Excellence for conducting collaborative thematic research, which he considered as very cost-effective and suitable for developing countries like Sudan. He expressed his Ministry s desire to benefit from the programmes of the Network. He considered it high time for Sudan to focus on scientific and technological cooperation, which he deemed the gateway to sustainable development.

The Minister reiterated his pledge to follow up on the commitments made by his fellow colleagues in the government with respect to COMSATS programmes and activities.

At the end of the meeting, the Executive Director presented a set of COMSATS publications to the Sudanese Minister for Higher Education and Scientific Research.

Meeting with the Minister for Science and Technology, Government of Pakistan (July 16, 2013, Islamabad)

On July 16, 2013, the Federal Minister for Science and Technology, Government of Pakistan, Mr. Zahid Hamid, visited COMSATS Secretariat for a briefing on the international programmes and activities of COMSATS. The Minister was accompanied by the then Federal Secretary, Ministry of Science and Technology, Mr. Akhlaq Ahmad Tarar.

During the meeting that was also attended by other senior officials of COMSATS Secretariat, the Executive Director COMSATS made a presentation on COMSATS international programmes and flagship projects in the host country of the Secretariat, Pakistan, viz. COMSATS Institute of Information Technology, and COMSATS Internet Services.

COMSATS role as an inter-governmental organization of 21 Member States was highlighted, which has also an affiliated Network of 18 scientific institutions as its Centres of Excellence. He informed the Minister that COMSATS Secretariat manages COMSATS programmes and activities with guidance from its statutory bodies, namely, the Commission, the Coordinating Council, and the Consultative Committee, which include facilitation of joint research among clusters of scientific institutions in member countries through its International Thematic Research Groups (ITRGs). The Minister was also informed about COMSATS existing collaborations with UNESCO and ISESCO, as well as its efforts for creating synergies with other important scientific organizations of the South and the North, including TWAS, AS-ICTP and CERN.

The Minister was briefed about COMSATS participation in the preparation of Pakistan s National Science, Technology and Innovation Policy (2012). The Executive Director urged the Minister to seek political support for enhancement of GERD to 1% of GDP for bringing Pakistan at par with other countries of the region. Discussing the financial affairs of COMSATS, the Executive Director sought the Minister s support to enhance Government of Pakistan s annual grant to COMSATS to suitably fulfill its international obligations and smoothly undertake its national and international activities. Support of the Ministry was also solicited for establishing COMSATS Endowment Fund in accordance with the commitment made by the Prime Minister of Pakistan in 2012 during the 2nd COMSATS Commission Meeting.

The Minister was appreciative of the role played by COMSATS for S&T-led development in the South. He lauded COMSATS initiative for promoting joint research among the developing countries through its ITRGs. The Minister noted with satisfaction the efforts of COMSATS Internet Services for education and health sectors, its tele-health initiative in particular. He showed willingness to support the expansion of CIS tele-health operations to far-flung areas of the country.

The Minister also invited COMSATS intellectual inputs for devising an S&T Strategy for the Government of Pakistan based on National Science, Technology and Innovation Policy-2012. The Minister expressed his Ministry s desire for enhancing research on fuel-cell technology. In this respect, the Federal Secretary advised COMSATS to prepare a project proposal for submission to MoST for its consideration.

The meeting concluded on a note of satisfaction on the mutual cooperation and support between COMSATS and the Ministry of Science and Technology.

The Minister was also presented a set of COMSATS recent publications.

Meeting with the Ambassadors of COMSATS' Member States in Islamabad (March 28, 2013)

On March 28, 2013, a dinner-reception in honour of the Ambassadors of COMSATS Member States in Islamabad was hosted by the Ministry of Science and Technology (MoST), Government of Pakistan, in connection with the then upcoming 2nd meeting of COMSATS Consultative Committee to be held in Accra, Ghana (Section 1).

Ambassadors/Heads of Mission of five Member countries, Jordan, Korea (D.P.R.), Sudan, Syria, and Tunisia, and representatives of diplomatic missions of Bangladesh, China, Egypt, Iran, Kazakhstan, the Philippines, and Sri Lanka attended the dinner meeting. Other guests included officials from MoST, COMSATS Institute of Information Technology, and COMSATS Internet Services.

Addressing the august gathering, the Executive Director COMSATS underscored the significance of the two international meetings of COMSATS organizational bodies in providing future directions and guidelines to the organization for achieving S&T-led development in its Member States. Speaking on the occasion, the then Federal Secretary MoST, Mr. Akhlaq Ahmad Tarar, welcomed the participants and highlighted the importance of the Ghana meetings. He appreciated the proactive role being played by the diplomatic missions of COMSATS Member States in Islamabad, and noted their efforts made during the previous year for sensitizing respective governments about the 2nd Commission Meeting of COMSATS that was held in Islamabad, on 16-17 April 2012. He also hoped for similar support and cooperation to ensure maximum participation from the Member States at the 2nd Consultative Committee Meeting.

Meeting with the High Commissioner of Mauritius to Pakistan (March 28, 2013, Islamabad)

The High Commissioner of Republic of Mauritius, H.E. Mr. Mohammed Rashad Daureeawo, made a courtesy call on the Executive Director COMSATS, Dr. I.E. Qureshi, on March 28, 2013. With a view of Mauritius' prospective membership of COMSATS, the High Commissioner was briefed by Dr. Qureshi on COMSATS' international role and on-going programmes and activities. The meeting was also attended by the Advisor (Programmes) and Deputy Director (Programmes) of COMSATS.

The Executive Director noted that Mauritius is an important African country with a vast scope for scientific collaboration and exchange. During his presentation, Dr. Qureshi

shed light on the vision behind establishing a Commission at the level of Heads of the State/Government and its Network of International S&T Centres of Excellence. Dr. Qureshi informed the High Commissioner about COMSATS current leadership, geographic presence, various organizational bodies, thrust areas, as well as cooperative mechanisms that provide the organization with the necessary leverage to effectively pursue South-South cooperation among the Member States.

The Executive Director concluded his presentation with a hope to see Mauritius joining COMSATS as a Member State and nominating one Mauritian R&D/S&T institution to join COMSATS Network of Centres of Excellence for effectively benefitting from the cooperation being offered through the platform of COMSATS. In this connection, COMSATS' Draft Accession Agreement and other relevant documents were handed over by the Executive Director to the High Commissioner, who appreciated the role being played by COMSATS and the enormous efforts of Dr. Qureshi and his colleagues at COMSATS Secretariat to achieve its mission. H.E. Mr. Daureeawo pledged to forward the Membership documents, along with his report supporting the case for Mauritius membership to COMSATS, to the relevant Ministry in his home country. He also indicated the University of Technology, Mauritius (UTM) as the potential institution to join COMSATS Network.

Dr. Qureshi noted that COMSATS Institute of Information Technology (CIIT), ranked No. 9 among the higher education institutes in Pakistan, is one of the Centres of Excellence of COMSATS and possesses enormous potential to contribute in the field of Higher Education in Mauritius. Dr. Qureshi informed that, on Mauritius becoming a Member State, Mauritian students could also benefit from the scholarships offered by CIIT for COMSATS Member States.

Meeting with the Foreign Secretary, Government of Pakistan (March 22, 2013, Islamabad)

A meeting was held with the Foreign Secretary, Government of Pakistan, at his office on March 22, 2013, to brief him about the then upcoming COMSATS two meetings in Accra, Ghana. The Executive Director informed the Secretary that the Consultative Committee of COMSATS, represented by senior government officials from COMSATS Member States holding the portfolio of S&T, was to meet for the second time to discuss a nine-point agenda. The 16th meeting of the Coordinating Council, the Secretary was apprised, would be held in conjunction with the Committee s meeting to discuss matters primarily concerning the Council s membership and COMSATS international technical programmes.

During the meeting, support for maximum participation of Member States in the Consultative Committee meeting was requested. Other issues discussed on this occasion were:

i. Stronger coordination between COMSATS and Ministry of Foreign Affairs in strengthening of COMSATS role in Member States;
ii. Greater engagement with African countries following the two meetings in Accra;
iii. Support of the Ministry for induction of new COMSATS Members.

It was decided that Foreign Secretary will visit COMSATS Secretariat in the near future and discuss all avenues of support from his Ministry.

Meeting with the Ambassador of Sudan to Islamabad (January 31, 2013)

On January 31, 2013, the Executive Director COMSATS held a meeting with H.E. Mr. Al-Shafie Ahmed Mohamed, Ambassador of Sudan, at the Embassy of the Republic of Sudan in Islamabad. The Advisor (Programmes) COMSATS also attended the meeting.

Dr. Qureshi briefed the Ambassador about his visit to Sudan, from November 20-22, 2013, where he participated in the 6th Islamic Conference of Ministers of Higher Education and Scientific Research; held meetings with senior officials of Sudanese Ministry of Science and Communication, and Ministry of Industry; and visited the Industrial Research and Consultancy Centre (IRCC) in Khartoum, which is COMSATS Centre of Excellence in Sudan.

The Ambassador showed keen interest in securing scholarship opportunities for Sudanese students to study in Pakistan. He noted that over 500 Sudanese students are presently studying at various institutions in Pakistan. The Ambassador was informed about the standing offer of scholarships for students from COMSATS Member States to study at various campuses of COMSATS Institute of Information Technology (CIIT) and that the applications of interested Sudanese students have been forwarded to CIIT for processing.

8

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

- COMSATS Institute of Information Technology (CIIT), Pakistan 84
- Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh 87
- International Center for Climate and Environment Sciences (ICCES), China 88
- International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica 90
- Royal Scientific Society (RSS), Jordan 92
- National Mathematical Centre (NMC), Nigeria 95
- TÜBİTAK Marmara Research Center (MAM), Turkey 97
- Industrial Technology Institute (ITI), Sri Lanka 99
- Higher Institute for Applied Sciences and Technology (HIAST), Syria 101
- Tanzania Industrial Research and Development Organization (TIRDO), Tanzania 102

A group of eighteen R&D institutions from various developing countries, predominantly COMSATS' Member States, is affiliated with COMSATS as its Network of International S&T Centres of Excellence. The Network Members serve as COMSATS technical resource for South-South cooperation, while following their own programmes of scientific research and development. This section covers reports received from COMSATS Centres of Excellence.

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

COMSATS Institute of Information Technology (CIIT), Pakistan

In 2013, Higher Education Commission (HEC) of Pakistan announced Quality and Research based rankings of Pakistani higher education institutes, whereby COMSATS Institute of Information Technology (CIIT) has been ranked at number 4 in General Universities (Large) category among all 132 universities of Pakistan. During the year, CIIT attained tremendous growth in terms of its student population, faculty members and resources. The student population escalated to 27,029, while the number of faculty reached a figure of 2,402 in all campuses of CIIT. In 2013, 27 International students were enrolled in different graduate and undergraduate programmes at CIIT s Islamabad and Abbottabad campuses. These students come from Nigeria, Sudan, Jordan, Iran, Afghanistan and Palestine. Out of these foreign students, twelve are on CIIT s scholarship offered during the Coordinating Council meetings for COMSATS Member States.

In an effort to achieve its goals and provide education par excellence to its students, CIIT has been giving its faculty international exposure and training in their respective fields. CIIT has a number of faculty members who have completed their degrees, such as MS, PhD and Post Doctorate, from prestigious universities across the globe. CIIT faculty includes French, Chinese, German and Japanese Alumni, and has various Alumni associations, like Association of American Graduates, German Alumni Association and Chinese Alumni Association.

National and International Partnerships and Collaborations

Collaboration with Potsdam Institute for Climate Impact Research (PIK), Germany: As a result of a five year Cooperation Agreement with Potsdam Institute for Climate Impact Research (PIK) of Germany, CIIT launched its Centre for Climate Research and Development (CCRD), on April 5, 2013, at Islamabad campus. The agreement is also aimed at collaboration for research activities between the two respective institutions; and exchange of scientists. The cooperation will also include exchange of students, doctoral candidates or postdoctoral assistants; holding of jointly organized symposia, conferences and meetings on research issues; and setting up of joint research projects at the Asian and global levels.

Partnership with Senior Experten Service (SES): CIIT has been benefiting from the assistance of Senior Experten Service (SES), Germany, since 2010. In the year 2013, CIIT engaged the services of the senior expert from SES, Mr. Manfred Hake. He was tasked with assisting the International Office of CIIT in devising successful strategies for gainful interactions with German universities.

Erasmus Mundus Mobility with Asia (EMMA) Partnership: Under this Partnership Programme, CIIT has been able to get fully funded mobilities/scholarships to European universities during the recent years. For 2013, 13 scholarships were allocated for partner universities and other candidates from all over Pakistan. Against these, 5 scholarships were availed by CIIT students, faculty members and staff. The breakdown of scholarship for CIIT is as follows:

Category	Scholarships Awarded (No)	Duration (months)
Postdoctoral	03	06
Doctorate	01	36
Staff	01	01
Total	05	-

Grants and Funding Received

A list of projects approved and financial resources obtained for organizing conferences, seminars, research support and travel grants is given below:

Funding Programme	Approved Cases	Approved Funds (Millions of PKR)
Research Grant Programme for Universities (HEC)	12	56.23
Interim Placement of Fresh PhDs (HEC)	36	17.68
Post-Doctoral Program (HEC)	7	13.40
Program for Collaborative Research (HEC)	6	1.55
Pak-US S&T Cooperation Program	1	29.08
ICT R&D Fund	1	13.50
International Foundation for Sciences	1	1.20
Innovation Development Fund Program (Punjab Govt.)	1	5.00
Pakistan Science Foundation	1	2.10
SPEKE (British Council)	1	2.18
Access to Scientific Instrumentation (HEC)	1	0.66
IRISIP (HEC)	1	1.20
Grant for Maintenance of Scientific Equipment (HEC)	1	1.00
Seminars & Conferences	7	3.69
Travel Grants to attend Conference/ Seminar	52	10.43
Total		**158.9**

National and International Events Organized

11th International Conference on Frontiers of Information Technology (FIT 2013), Islamabad, December 16-18, 2013;
South Asian International Conference (SAICON 2013), Bhurban, December 4-6, 2013;
International Workshop on Doing Business with China , Islamabad, November 6-7, 2013;
Vice Chancellors' Forum 2013, Islamabad, September 23-24, 2013;
Technomoot 2013, Abbottabad, May 27-28, 2013;
2nd Pak-China Business Forum, Islamabad, March 23-26, 2013; and
1st Annual Global Forum on Islamic Finance (GFIF), Lahore, March 11-13, 2013.

Awards and Achievements

Institutional Awards

Three Star ranking by QS Ranking of Universities and Quality of Education, Singapore (Nov 2013)
FPPCI award for its outstanding services in the category of Education and Training (June 2013)

Individual Awards

National Civil Award of Pakistan, Sitara-e-Imtiaz, conferred upon Dr. Haroon Rashid, Pro-Rector CIIT;
National Civil Award of Pakistan, Tamgha-e-Imtiaz, conferred upon Dr. Jamshed Iqbal, Professor, Department of Pharmacy, CIIT Abbottabad;
National Civil Award of Pakistan, Tamgha-e-Imtiaz, conferred upon Dr. Sonia Zulfiqar, Assistant Professor, Department of Physics, CIIT, Islamabad;

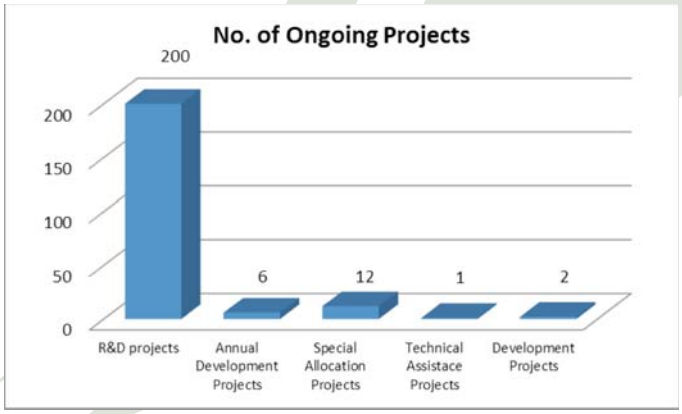
Outstanding Service Award for BASNet Workshop Chair, Dr. Nadeem Javaid, Assistant Professor, Center for Advanced Studies in Telecommunication, CIIT (Islamabad);
Best PhD Student Gold Medal in the 50th Convocation of University Technology Malaysia to Dr. Muhammad Amir Rashid, Assistant Professor, Department of Management Sciences, CIIT (Lahore);
Gold Medal (Sir Syed) by Nazria-e-Pakistan Council (Trust), Islamabad, given to Mrs. Aqeela Asif, Assistant Professor, Department of Humanities, CIIT Islamabad.

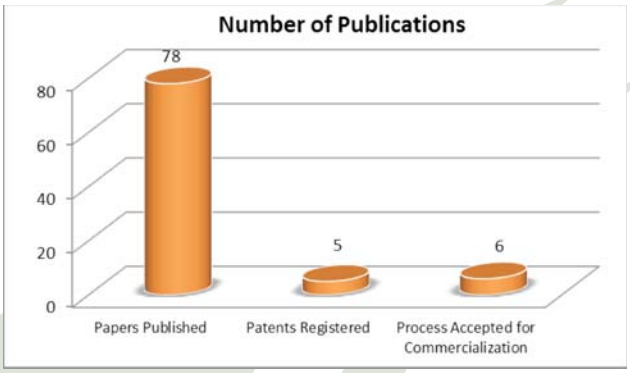
Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh

Bangladesh Council of Scientific and Industrial Research (BCSIR) is the principal public research organization of Bangladesh, and a Centre of Excellence of COMSATS since 2011. Being the national hub of scientific and industrial research, BCSIR aims at reinforcing the R&D sector in the country. During 2013, BCSIR accomplished a significant number of tasks, as well as strengthened its manpower by recruiting 75 Scientific Officers.

Major Research Activities

During 2013, BCSIR focused its research activities on a number of research areas, which are of immense importance in the context of applied research. Research projects were carried out under different categories, i.e. Research & Development, Annual Development Program of the Government of Bangladesh, special allocation





project of the Ministry of Science & Technology, Technical Assistance and development projects.

National and International Events Organized

Seminar on Institutional Transformation: From Science to Science led Innovation The CSIR Story
Seminar on Impact of R&D on National Development

National and International Collaborations

MoU signed with Indiana-Purdue University, USA
MoU signed with 3 local enterprises and academic institutions
A delegate from Korean International Cooperation Agency (KOICA) visited BCSIR to extend their cooperation

Institutional and Individual Awards

BCSIR won the National Award for the first time in recognition of its efforts for Green and Clean Environment
BCSIR scientists won the 3rd prize in recognition of their research work on Development of Slow Release Nano Fertilizer at the 19th International Science Conference of Islamic World Academy of Sciences (IAS)

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

International Center for Climate and Environment Sciences (ICCES), China, joined COMSATS Network of Centres of Excellence in 1995. In March 2013, ICCES was officially certificated as CAS-TWAS Centre of Excellence for Climate and Environment Sciences. This certification is expected to facilitate international cooperation between China and other developing countries initiated by ICCES.

Some Statistics - 2013	
No. of Publications in National and International Journals (total)	48
No. of Publications in SCI/EI indexed journals	33
No. of PhD degrees awarded	5
No. of Masters degrees awarded	5
No. of Post-graduate students enrolled	28
No. of Professors	14
No. of Associate professors	11
No. of Assistant professors	17

Ongoing Projects

Currently, there are 56 ongoing projects undertaken by ICCES, China

Ongoing Projects of ICCES China	
Funded by Ministry of S&T (MOST)/ M/o Finance of China	27
Funded by National Natural Science Funds of China (NSFC)	17
Funded by Chinese Academy of Sciences (CAS)	5
International collaborative projects sponsored by MOST	1
International projects sponsored by Thailand Research Fund (TRF)	1
Other projects	5
Total	**56**

Major Research Initiatives

In 2013, ICCES continued to make tremendous progress in academic research, especially in its major research areas of Earth System Dynamic Model and its related numerical simulations; meteorological and environmental prediction; theories and methods of hazard assessment; theories and methods of data assimilation, as well as disastrous weather process and its dynamic studies.

Through making unremitting efforts, the first version of Chinese Academy of Sciences (CAS) Earth System Dynamical Model (ESM) has been developed at ICCES in 2013. The CAS-ESM consists of an atmosphere model, an ocean model, a sea-ice model, a land-hydrological model, an atmospheric chemistry and aerosol model, and an ecological and biogeochemistry model. These component models are integrated via a flux coupler, and are capable of simulating the evolutionary processes and interactions of each component of the earth system.

ICCES has further improved its short-term climate prediction system. The Center also provided consultancies and made predictions of disastrous weather and climate events, including the summer flood/drought situation, Landing Typhoon activities, cold surge activities in wintertime and spring dust-storm events in Northern China, which are often urgently required by government departments and authorities.

Awards and Honors

Prof. Jiang Zhu, Dr. Jiping Xie and Dr. Changxiang Yan were awarded the second prize of National Scientific and Technological Progress in 2013 , for their

collaborative contribution on the Argo-ocean Observation and Data Assimilation and Improvement of Short-term Climate Prediction in China .
Prof. Jiang Zhu won the Scientific and Technological Progress Award sponsored by the Ho Leung Ho Lee Foundation.
Dr. Fei Zheng was selected as a member of the Young Talent Projects by the Organization Department of the CPC Central Committee and the outstanding member of Youth Innovation Promotion Association, CAS.
Dr. Fang LI was awarded the 2013 Innovative Contribution Award by Institute of Atmospheric Physics (IAP), CAS.

Capacity Building Events Organized

12th CAS-TWAS-WMO Forum International symposium on Operational Oceanography for Developing Countries , September 9-12, 2013, Beijing, China
International Training Workshop on Extreme Weather and Climate Events Detection, Monitoring, prediction and Risk Management for Developing Countries , July 14-23, 2013, Beijing, China

International Cooperation

Thailand-China Cooperative Research Project on the Development of Seasonal Climate Forecast System in Thailand Using IAP-DCP Model is being sponsored by Thailand Research Fund (TRF). The project was launched in September 2013. This two-year project aims to promote the application of short-term climate prediction system developed independently by China in Thailand. IAP Short-Term Climate Prediction System will be directly used in the prediction of floods and droughts in Thailand and is expected to improve Thailand s capacity building in climate and environment sciences.

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

ICENS continued to promote the value of science as an aid to solving day-to-day societal problems, striving to do research that is useful and relevant to the practical needs and protection of Jamaicans and which also demonstrates the important contribution that science can make to building a safe and prosperous future. During 2013, particular attention was given to designing modest research projects to apply science to establish community-scale enterprises with an aim to create new jobs and income, as well as to substitute imports for benefiting ordinary Jamaicans.

At present, ICENS has thirteen scientists and technologists, five technicians, four administrative staff and three support staff and has published seven research papers during 2013.

The ICENS Neutron Activation Laboratory reached the topmost level of performance, recognized as consolidated state of the practice in the latest round of the IAEA-sponsored Wageningen Evaluating Programs for Analytical Laboratories (WEPAL) proficiency testing programme. Neutron Activation Analysis, Energy Dispersive X-Ray Fluorescence and Total Reflection X-Ray Fluorescence techniques were used in

this round of proficiency testing that involved blind analysis of soil and plant samples.

ICENS revised and restructured its website during the year and started construction of an online viewer system for displaying selected island-wide geochemical maps for use by any enquirer.

Major Research Activities

The main research activity of ICENS continued to be environmental geochemistry, targeted at tracking the pathways by which trace-elements pass from soils through crops to people, using NAA, EDXRF, TXRF, ICP-OES, AAS and ion-chromatography. The technique was used depending on the type of sample medium analyzed. This research focused on the speciation of cadmium in Jamaican agricultural soils, i.e. its distribution pathways in a particular sample or material type. ICENS developed simple passive water samplers and deployed them in local rivers in order to make in situ determinations of trace metal associations with dissolved organic matter as a means for chemical profiling of the river water. The island geochemical survey was extended over a more detailed scale 2 x 2 km^2 sampling grid in order to improve the understanding of cadmium distribution in Jamaican soils. Also, ICENS renewed collaboration with specialist geochemical laboratories in Canada and the United Kingdom in order to update interpretations.

Work on a new review of the impact of cadmium on crops, animals and human systems and compilation of a Jamaican national database of food compositions also continued, using the data for Jamaican farmed and processed foodstuffs. The database helped to scope the year s field sampling programme, and will be structured into sections on root vegetables, leafy vegetables, grains, fruits, seafood and processed or packaged foods, and contains results of an estimated 1,100 analyses for up to 35 inorganic elements. It will eventually be made available for online reference by researchers through the ICENS web site at www.icens.org. In the wake of increasing competitions and price hike for fossil-fuels, analyses in nuclear energy remained an ongoing activity at ICENS.

ICENS continued to add value to primary field and laboratory data by transforming them into information and knowledge products suitable for providing decision-makers with GIS-based spatial visualisations and predictions based on terrain models to inform realistic options for shaping national strategies and actions. The advanced indexing of the ICENS EShare data repository system allows the retrieval, re-examination and re-interpretation of georeferenced samples and data collected over 30 years ago, so that they can be analysed using new techniques, if necessary, in-house or by other research laboratories.

Research Initiatives

With Jamaican Mines and Geology Division, a search began for natural and industrially generated pozzolans in the country. ICENS plans to develop a proof of concept project designed to demonstrate the suitability of pozzolans in Jamaica. During the year, ICENS planned two other research projects for developing new materials from Jamaican agricultural and industrial wastes, in order to substitute imports and create new local job opportunities for Jamaican

SMEs and small urban or rural communities. One project aims to develop environment-friendly materials for packaging and food containers from banana plant waste as a means of substituting polystyrene, which harms the Jamaican environment and is produced from expensive petroleum imports. The other project focuses to devise a methodology to enable local SMEs or community groups to carry out the initial concentration of REE-bearing components from end-of-life electronic waste goods (e-waste), in order to make an exportable urban ore material.

International Collaborations

ICENS became the Jamaican node of the Caribbean Knowledge and Learning Network (CKLN) linked to the C@ribNET broadband backbone, which links the Caribbean to the global community of Research and Education Networks (RENS) through Internet-2 in the USA, Géant in Europe and Red CLARA in Latin America.

In February, ICENS launched the OAS-funded 2008-2013 project in Kingston, titled Institutional Strengthening for Promoting Best Practices in Science and Technology for the Caribbean States . A platform with a Digital Repository Database System was set-up on three identical servers in Jamaica (ICENS), Barbados & Trinidad, and Tobago, as the initial core of a wider Caribbean-wide system for sharing digital information on science and technology.

Collaboration began with scientists from Japan and China on Cd isotope ratio analysis of soil samples as these methods are currently not available in Jamaica; and with scientists from Namibia and Sweden, in order to improve the monitoring of urban air pollution by aerosols and particulates in Jamaica.

Collaboration began with the Department of Chemistry, University of the West Indies (UWI), Mona, to find ways to mitigate the toxic effects of lead in the human environment. It is important to monitor the distribution of lead in the urban environment because increasing evidence from studies in the United States and Australia indicates that children with untreated lead poisoning may be at risk of developing serious brain disorders that can cause mental ill-health in later life.

ICENS began a 4-year coordinated research programme (CRP) with the IAEA, to develop a modern open system architectural framework specification (OpenNAA), and reference implementation for Neutron Activation Analysis (NAA).

As part of the new National Minerals Plan, planned by the Jamaican Ministry of Science, Technology, Energy and Mining, ICENS continued collaboration with the Mines and Geology Division and the UWI Geography and Geology Department to compile a new digital geological map of Jamaica with a separate overlay of mineral occurrence data. Both compilations were designed for online reference by potential international investors in the country s mineral industry.

Royal Scientific Society (RSS), Jordan

One of the honours of the Royal Scientific Society (RSS) of Jordan has been the appointment of its Founder and Chairman, His Royal Highness Prince El Hassan Bin Talal, as the new Chairman of the UN Secretary-General s Advisory Board on Water and Sanitation (UNSGAB) in 2013.

Establishment of New Centres and Facilities

A new National Software Quality Assurance Centre has been launched by Royal Scientific Society, which is the region s first comprehensive software quality assurance and testing centre. The new Centre is equipped with state-of-the-art infrastructure based on Hewlett Packard s Converged Cloud solution technology, providing highly-scalable cloud-based services. The Centre provides quality-assured testing and set-up services to clients.

ICT related Initiatives/ Projects

Social Health and Information Technology for Rural Communities (SOHITCOM) portal: To help bridge the gap of concentration of medical services from rural to urban areas of the country, the Royal RSS developed and implemented an electronic and mobile health (e-health) platform to improve the health of women and children in remote and rural communities. For developing the Social Health and Information Technology for Rural Communities (SOHITCOM), a portal was developed. RSS worked with medical practitioners and experts of Information and Communication Technologies (ICTs) to provide information that could be accessed from computers or mobile devices. The project fostered participation through different tools, including the Internet, mobile applications, SMS, and voice messages. The main focus of the project was to use ICTs in maternal healthcare by improving access to clinical advice for women in rural and remote areas. This included developing an online web-portal for rural practitioners with information on maternal and newborn s health, provided in the form of factsheets, medical articles, videos, and question/answer sessions with health experts.

Since the IDRC-supported research for the portal has ended, RSS has continued its work on ICTs to improve health equity in the country. Current projects aim to optimize the use of medical equipment.

The Network for Jordanian Industrial Sustainability: The Water Reuse and Environmental Conservation Project (WRECP) of the United States Agency for International Development (USAID), handed over responsibility for The Network for Jordanian Industrial Sustainability to RSS in a ceremony on December 10, 2013, at the RSS campus. The Network is an interactive web-portal for sharing information about ways in which the Jordanian industrial sector can both conserve scarce resources and improve environmental performance. The Chairman of RSS; President of RSS, HRH Princess Sumaya Bint Al-Hassan; and USAID-Jordan Mission Director, Ms. Beth Paige, signed a Memorandum of

Understanding to formalize the handover.

International Collaborations

Agreement with the Public Action for Water, Energy & Environment (PAP) of USAID to promote the participation of youth and community-based organizations in issues of water and energy efficiency and conservation through the promotion of water-saving devices and energy-saving light bulbs in Ajloun, Mafraq and Ramtha areas of the country.
Agreement with the German Development Cooperation (GIZ) to assess the situation of the solar cooling system installed at the Dead Sea Spa Hotel.
Agreement with UNDP for the preparation of Jordan s third National Communication Report for conducting a public opinion survey.
Agreement with UN-ESCWA, Lebanon, for strengthening national capacities in the ESCWA region on developing green production sectors.
Agreement with CYTHELIA SAS, France, for Establishment of a benchmark and list of equipment, manufacturers, suppliers and installers for energy efficiency investment in Jordan, Solar Water Heaters (SWH) and Solar Panels (PV) .
Agreement with the German Development Cooperation (GIZ) for solar cooling for the industry and commerce.
Agreement with Pioneers for training and development, Ramallah, Palestine, for the cooperation in the field of executing training programs.
Agreement with UN-ESCWA, Lebanon to Identify renewable energy PPPs case studies in poor and/or rural areas in Jordan for trainings and assessments.
Agreement with the Norwegian Embassy to implement a project for the development of Jordan s National Network on Environmental Compliance and Enforcement.

Capacity Building Events Organized

1st Arab-Euro Conference on Higher Education (AECHE), hosted by the University of Barcelona
Arab Advisors 10th Convergence Summit attended by 590 senior executives, representing 210 regional & global TMT companies
Symposium on This is Water , jointly organized with the Institut Francais
Board meeting of the World Association of Industrial and Technological Research Organisations (WAITRO), Amman, Jordan, September 24, 2013
Workshop on Sustainable Cities co-organized with UN-HABITAT
Training workshop for Companies and Hazardous Materials Stores in the

Emirates on the Integrated Hazardous Materials Management System, co-organized with Environment Agency - Abu Dhabi

Regional Stakeholders' Workshop of the Blue Peace Project, titled "Water Security in the Middle East: Strategic Management of Hydrological and Meteorological Data and Information Product Generation through Assessment of Weather, Climate and Hydrology Service and Capacities in Lebanon, Jordan (and Syria) with engagement of Turkey and Iraq , co-organized with World Meteorological Organization and Swiss Agency for Development and Cooperation, held

National Mathematical Centre (NMC), Nigeria

The National Mathematical Centre (NMC), Nigeria, is an Inter-University Organization. The cardinal objective of the Centre is to promote research, and build capacity in the area of mathematical sciences. The Centre s research and capacity-building activities revolve around developing appropriate initiatives and resources of international standing for sustaining interest in the mathematical sciences at all levels and their applications to real-life issues.

In addition to existing Departments and Units of the Centre, Linkage and Advancement Unit was established in the Office of the Director, to oversee issues of local and foreign collaborations. It is expected that through this Unit collaboration shall be established with more institutions, both governmental and private.

New Initiatives

Graduate Scholarships Scheme: Scheme to facilitate exceptionally brilliant Nigerian mathematical sciences graduates has been instituted for them to pursue high-level mathematical science program in Nigeria and abroad. The scholarship-based graduates programme runs in collaboration with a number of institutions, such as COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, University of Manitoba, Canada, and Uppsala University, Sweden. Beneficiaries were the best performing candidates in the 3-Month long (January March, 2013) Mathematical Science Graduate Foundation and Entrepreneurship Development Programme of the Centre.

One-year Visiting Research Fellowship: NMC is organizing a one-year visiting research fellowship in the following areas of research: Mathematics (Pure and Applied), Mathematical Physics, Computer Science, and Statistics.

Promotion of Mathematical Science among Women: In order to promote the study of mathematical sciences among

the female population of the country, NMC initiated the crowning of the Africa and Nigeria Mathematics Queens. The Nigeria First Lady, Dame Patience Jonathan, awarded the awards to the winners. Also, a 2-week long national specialized training was also organized for the mathematics teachers of the girls schools (co-educational and girls only) in the same vein.

Mathematical Sciences Graduate Foundation Development and Entrepreneurship Training Programme: This three months long intensive training is designed for Mathematical Science graduates with at least a second class upper division. Moreover, NMC also seeks scholarships from relevant bodies for candidates with good performance. Between January-March 2013, sixty-six carefully selected unemployed graduates of Mathematical sciences took part in the first edition of the Mathematical Sciences Graduate Foundation Development and Entrepreneurship Training Programme. Foreign Scholarships were secured for eleven of the top twenty in the class, and the Centre sponsored their GRE examination to brighten their chances of getting scholarships for higher studies in mathematical sciences.

Capacity Building Activities

Apart from the trainings Mathematical Sciences Graduate Foundation Development and Entrepreneurship Training Programme, NMC organized the capacity-building activities of NMC during the reporting period are as follows.

The National Mathematical Center, Abuja organized and hosted the Pan African Congress of Mathematicians (PACOM 2013) in year 2013. The Congress, based on the Theme: Contemporary Development in the Mathematical Sciences, attracted Mathematical scientists from Africa and other parts of the world. The highlights of the events included a General Assembly, Pan African Mathematical Olympiad (PAMO), invited plenary lectures, invited lectures in the parallel sessions, short communication, posters presentation, books exhibition, round tables and excursions

From 19-22 August, 2013, a 4-Day National Summer School & Software Training Workshop on Advanced Research Methods and Data Analysis was organized in collaboration with the African Higher Education and Research Observatory (AFRIHERO www.afrihero.org.uk).

A series of capacity building workshops for Mathematical Sciences Lecturers in Tertiary Institutions on the Teaching of Mathematics, Statistics and Sciences was organized under NMC s Mathematics Science Education Programmme.

The International Workshop on Gifted Education and Establishment of Gifted and Talented Schools training was organized in collaboration with some Human Resources Development institutions in London.

Individual and Institutional Awards

In the pre-congress assembly of the Pan African Congress of the Mathematicians (PACOM 2013), Director/Chief Executive Officer of NMC, Prof. A.R.T Solarin was elected the new President of the Africa Mathematical Union (AMU). Also, Prof. Solarin has been selected as one of the three COMSATS Distinguished Professors .

On July 1, 2013, as part of the pre-congress events of PACOM 2013, the largest mathematics class involving 2,381 high-school students was achieved by the NMC at the International Conference Centre, Abuja, Nigeria. By this achievement, NMC (Nigeria) breaks the earlier held Guinness World Record of 2,000 students, by India.

One Gold, one silver and three bronze medals were won by NMC students in the Pan-Africa Mathematics Olympiad (PAMO) in Nigeria (May 2013), and International Mathematical Olympiad (IMO) in Colombia, (July 2013).

Publications

The Vol. 2 No. 1 (June 2013) of NMC s journal, Journal of Mathematical Sciences was brought out during the period. This is a special edition of the journal based on some of the reviewed papers presented at the First International Conference on Scientific Computing held on August 14-20, 2011, at NMC. Moreover, the Faculty of NMC has also published papers in mathematical journals on various applied concepts of the mathematical sciences.

TÜBİTAK Marmara Research Center (MAM), Turkey

New Initiatives and Developments

TÜBİTAK MAM Environment and Cleaner Production Institute (ECPI): On April 6, 2013, the TÜBİTAK Science Board decided to award the TÜBİTAK MAM s Environment Institute, a status of Environment and Cleaner Production Institute . The position entrusts the Institute to be the National Cleaner Production Centre for Turkey.

'R/V TÜBİTAK MARMARA' Launched: TÜBİTAK MAM launched its marine research vessel R/V TÜBİTAK MARMARA in 2013. The vessel is catering to

Some Statistics - 2013	
Researchers	678
Administrative staff	242
Other staff	62
Total Personnel	982

PhD	223
MSc	191
BSc	90
Publications	200 (8 articles, 70 SCI, 122 reports)
Patents filed	1

various marine research activities, including on-site measurement, sampling, analysis and data collection for multi-disciplinary studies. R/V TÜBİTAK MARMARA has a Wet Laboratory; Dry Laboratory; Biology Laboratory; Temperature Controlled Laboratory; and Computer Laboratory. The vessel has the capacity to carry 12 crew member and 11 researchers. Apart from the electrical equipment, the vessel carries research equipment, including a Unit with a capacity of 3 tons of A-Frame; Multi-Purpose Oceanographic Winches; Depth Sounder Multibeam; Single Beam Depth Gauge; Acoustic Flow Meters; CTD Probe; and Multi Water Sampler. It is 41.2m long, 9.55m wide, and 4.50m high, and can acquire a maximum speed of upto 14 knots.

Capacity-Building Events Organized

2nd National Photonic Science and Sensor Technology Conference 2013 , was organized by the Photonics Technology Group of TÜBİTAK MAM s Materials Institute and Gebze Institute of Technology. The aim is to following current developments and sharing up-to-date information in the field of photonics and sensors. More than 60 people attended the conference, including graduate students, post-docs and professors from various universities.

International Collaborations

The Materials Institute of TÜBİTAK MAM is currently undertaking the following:

COST Projects: CM1005 Supramolecular Chemistry in Water ; MP0702 Fabrication of Nanostructured Surface Plasmon Sensors by Using Porous Anodic Alumina Templates and Matrices ; and MP0901 Fabrication and Characterization of Nanostructured Alumina Waveguide Films for Molecular Sensing Applications .

European Commission's FP-7 Energy Work Programme: CHEETAH Project on Cost-reduction through material optimization and Higher Energy Output of Solar Photovoltaic Modules, joining Europe s Research and Development efforts in support of its PV industry CHEETAH .

Industrial Technology Institute (ITI), Sri Lanka

Industrial Technology Institute (ITI), Sri Lanka, has five Research & Development Divisions, four Technical Services Divisions and provides 10 different Supporting Services. The institute is under the process of establishing the World Class R&D facility Modern Research and Development Center in Malabe, Colombo, Sri Lanka. During 2013, ITI-Sri Lanka carried out a total of 13,201 standard and customized tests for the industry. Calibration services, materials and chemical and microbiology test services made up more than 80% of these services. Five hundred and fifty persons from 36 company level industries were trained.

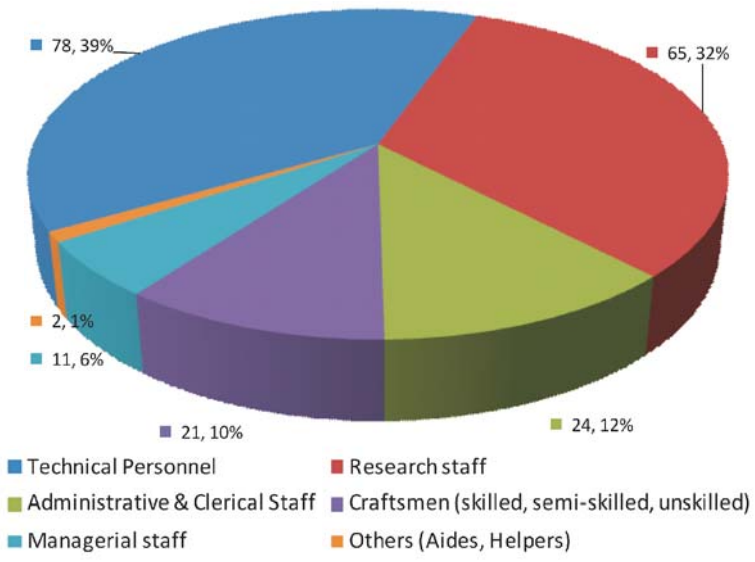
In pursuit to strengthening its IP regime, ITI has formulated and published its IP Policy and trained its five staff members in IP skills. The Institute is also trying to expand the scope of its Chemical Metrology Services. Moreover, the Institute has filed six patents and brought out 9 publications during 2013.

Industry Driven Research Projects

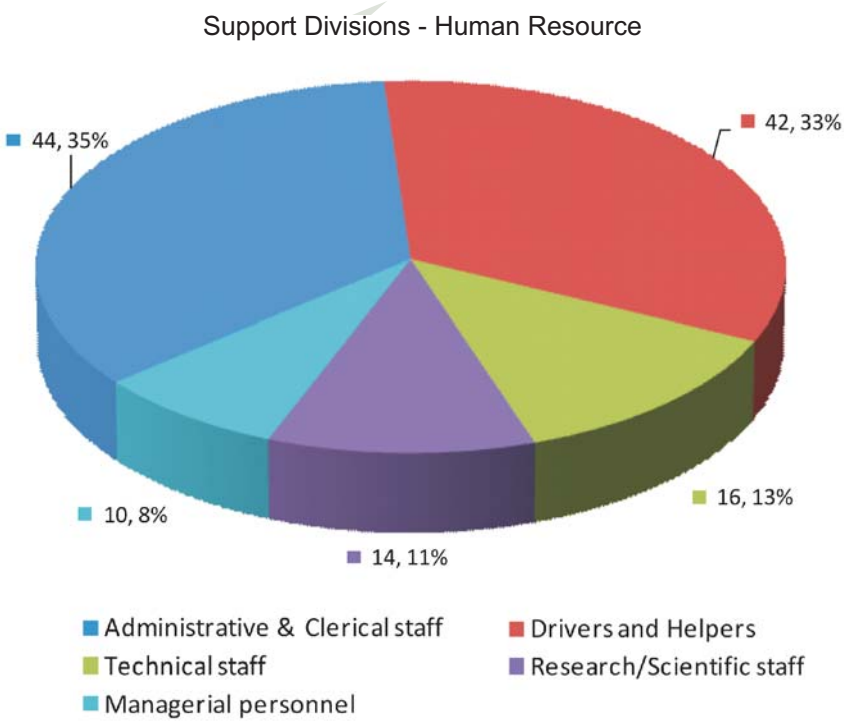
Some major projects being undertaken by ITI, Sri Lanka, relate to the following:

- establishment of a testing facility to assess imported animal feed to utilize locally available tomato varieties for puree production and thereby reduce the importation;
- establishment of non-thermal processing technologies for blended fruit and vegetable juice;
- development of red-clay based superior quality cookware;
- development of constructed wetland technology for removal of nitrogen and phosphorous compounds from food industry wastewater;
- development of a photo-catalytic reactor for treatment of waste water generated from agrochemical packaging industries;
- development of a multiplex PCR assay kit for the detection of wheat adulteration in traditional flour types;
- development of molecular methods for the estimation of rice percentage in wheat/rice incorporated bakery products;
- biological control of strawberry and vegetable pests;
- establishment of quality standards for controversial /endemic /rare medicinal plants
- value addition to fruits and vegetables;
- enhanced preservation of fruits by controlled delivery of hexanal using nano-fibers and bio-films developed from indigenous crops;
- formulation of probiotic foods as an

Technical Divisions - Human Resource



alternative treatment for helicobacter pylori;
- bacillus thuringiensis microbial pesticide; and
- technical monographs



Events and Conferences

ITI-Sri Lanka organized the following two events in 2013:

1st World Congress on Pharmaceutical Science & Chemical Technology held in Colombo, Sri Lanka during 16-18 December 2013;
ITI Annual Research Symposium - November 2013
World Congress on Pharmaceutical Sciences and Chemical Technology orgnzied at the local organizer for the World Congress on Pharmaceutical Sciences and Chemical Technology (December 2013).

International Collaborations

ITI is collaborating with IDRC-Canada and the University of Guelph & TNAU, Coimbatore, India, for joint research on post-harvest technologies.
The Institute is also engaged in the Indo-Sri Lanka Joint Research Programme with ICRISAT India.
On the request of Medical Health Laboratory, Food and Drug Authority of Republic of Maldives, ITI calibrated their ovens, incubators, autoclaves, balances, water baths and refrigerators, as a requirement for obtaining ISO-17025 for their laboratory. An awareness training was also provided to the staff of the Medical Health Laboratory.

Individual and Institutional Awards

The three ITI scientists received Presidential Research Publication Award: Dr. Radika Samarasekare, Additional Director R&D; Dr. Ilmi Hewajulige, Senior Deputy Director - Food Technology; and Dr. Kushani Mahatantila, Research Scientist, Chemical & Microbiology Lab.
ITI Scientist, Dr. R.M.Darmadasa, received Sri Lanka Association for the Advancement of Science's General Research Committee Award for Postgraduates for his PhD research on Systematic & Anti-malarial properties of Munronia pinnata.

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

The Higher Institute for Applied Sciences and Technology (HIAST) was established in 1983 with the objective to satisfy a national need for highly qualified engineers. To achieve this objective HIAST builds on its strong cooperation with European institutions, especially French academic and research institutions; maintains a highly qualified faculty and research staff; reviews and updates its curricula on regular basis; introduces modern learning approach and research infrastructure; and implements a strong students selection criteria.

HIAST offers Engineering degrees in Information Technology, Communication Systems, Electronic Systems, Mechatronics, and Aeronautics. The Institute also offers Masters and PhD degrees in Communication Systems, Material Science, Informatics (Decision Support Systems), and Electro-mechanics.

HIAST currently has 6 departments comprising a number of laboratories or Research Units. These are:

- Electronic and Mechanical Systems Department;
- Communication systems Department;
- Informatics Department;
- Physics Department;
- Mathematics Department; and
- Management Science Department.

HIAST contributes to spreading scientific and technical knowledge in Syria, through technology transfer and activities conducted in cooperation with other academic and research institutions, and also with the support of Ministries, governmental and private organizations in Syria and abroad. To achieve this, HIAST has always been maintaining strong relationships and cooperation

Human Resource at HIAST	
Total personnel	80
Scientists, Engineers and technicians	45
Support staff	35
PhD holders	6
Undergoing PhD	3
Masters degree holders	17
Undergoing Master training	3
Bachelor degree holders	8
Undergoing Bachelors training	5

with European Union, UNESCO, UNDP, UNIDO, JICA, and other international organizations. HIAST is also member of many regional and international organizations, such as AUF, CONFREMO, and COMSATS.

In 2013, the faculty and experts of HIAST have published 15 papers in the fields of mathematics, physics, communication systems and informatics. Moreover, The Institute has signed cooperation agreements with:

The Ministry of Environment, Syria;
The National Energy Research Center;
The National Agency for Network Services.

Tanzania Industrial Research and Development Organization (TIRDO), Tanzania

During the year 2013 TIRDO continued to implement its five-year Strategic Plan, which has the eight key focus areas relating to:

i. Local materials in industrial processes;
ii. Laboratory accreditation;
iii. Product safety and quality;
iv. Environmental-friendly production processes;
v. Competence and sustainability in terms of HRM, applied research, data and information acquisition, skills and expertise, knowledge and technological base and physical infrastructure;
vi. technical services for industrial development and dissemination of technical knowledge;
vii. adaptation to local and foreign industrial techniques and technologies; and
viii. development of a system to access and disseminate information and knowledge from applied research effectively.

During the year, TIRDO published/generated a number of technical reports for the jobs carried out for clients as per services rendered.

Ongoing Research Activities/Projects

Industrial bioconversion of selected Tanzanian crops and residues into value added products using biotechnology;
Value Addition on Leather Solid Wastes to Produce Leather Boards;
Utilization of Tunnel Solar drier to produce High Quality Cassava flour;
Universities, Innovation for Inclusive development in Africa- Towards a Research Network;
Product Quality Improvement and Establishment of Quality Certification System for Competitive Market Access (Accreditation).

Capacity-Building Activities

Accreditation: TIRDO continued to accredit three of its laboratories namely Chemistry, Environment and Materials testing laboratory, which involves Non-Destructive Testing techniques (NDT). The laboratories are at various stages of accreditation process.

Staff Development: During 2013, the HIAST staff attended the following capacity-building events:

Workshop on International Financial Reporting Standards (IFRS) in Tanzania
Seminar on Advanced Human Resource and Staff Development in Kenya

International Collaborations/Agreement

TIRDO has cooperative terms with the following international organizations:

World Association of Industrial and Technology Research Organizations (WAITRO);
South African National Accreditation System (SANAS) and SADCAS as accrediting bodies;
COMSATS;
African Institute for Capacity Development (AICAD);
Council of Scientific and Industrial Research (CSIR), India, through a Memorandum signed between CSIR and COSTECH of Tanzania;
Shriram Institute of Industrial Research, India.

Technical Support to Industries

During the year 2013, TIRDO continued to provide technical advisory services and support to industries in the areas of environmental assessment, energy audits, Non-Destructive Testing (NDT) services, food and water analysis, technical assessment for industrial start-ups.

9

REPORTS OF SPECIAL ASSIGNMENTS

- Board of Governors, COMSATS Institute of Information Technology 106
- COMSATS Internet Services 108
- COMSATS Tele-Health Programme 111
- Islamic World Science Net 113
- Scholarship Campaign 114

For the benefit of its member countries, COMSATS undertakes special assignments from time-to-time, such as conducting scientific studies, undertaking pilot projects or implementing educational programmes. Two of the projects of COMSATS 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 to acquire institutional status. Another project that has become a regular assignment of COMSATS Secretariat is the maintenance of COMSATS-ISESCO web-portal: Islamic World Science Net (IWSN).

REPORTS OF SPECIAL ASSIGNMENTS

Board of Governors, COMSATS Institute of Information Technology

COMSATS Institute of Information Technology (CIIT), which is a flagship project of COMSATS as well as an important member of COMSATS Network of International Centres of Excellence, held the 24th meeting of its Board of Governors (BoG) under the Chairmanship of Executive Director COMSATS, Dr. Imtinan Elahi Qureshi, on August 16, 2013. This governing body meets from time-to-time to deliberate on the important matters pertaining to the academic, administrative, legal and financial issues of various campuses of the university.

The members of BoG or their nominees who attended the 24th meeting were: Prof. Dr. Atta-ur-Rahman, Scientist Emeritus ICCBS; Mr. Najeeb Khawer Awan, Additional Secretary, Ministry of Science and Technology, Government of Pakistan; Mrs. Talat Anjum, Director General, Ministry of Education, Government of Pakistan; Rector CIIT, Dr. S. M. Junaid Zaidi; Registrar CIIT, Prof. Dr. Izhar Hussain; Incharge Islamabad Campus; and Directors of other six campuses of CIIT. The meeting was also attended by the Pro-Rector CIIT, Controller of Examination and Additional Treasurer CIIT, on special invitation.

Welcoming all the participants of the meeting, the Chairman appreciated the commitment and dedication of the management, faculty and staff of CIIT and associated it with the unprecedented growth the Institute has attained over the years. Some notable developments that took place during the intervening period between the last and the present meeting of the BoG included the reappointment of

Dr. I. E. Qureshi as the Executive Director COMSATS (Ex-officio Chairman of the BoG) for another term of four years, and the conferment of Civil Awards of Pakistan to three senior faculty members of the Institute. It was noted that four more officials have been nominated for the Civil Awards for the next year. The Chairman recalled the deliberations of the recent Coordinating Council and Consultative Committee meetings of COMSATS, held during early May 2013, in which discussions on agenda items pertaining to CIIT were held, such as CIIT s offer of hundred scholarship for graduate studies to students from COMSATS Member States; COMSATS International Thematic Research Group on Information & Communication Technologies; as well as the establishment of a Technology Park at the Institute.

The BoG expressed satisfaction over the smooth functioning of the statutory bodies of the Institute: Boards of Studies; Boards of Faculties; Board of Advanced Studies and Research (BASAR); Academic Council; Selection Board; and Finance & Planning Committee.

In his presentation on the occasion, the Rector CIIT shared the latest facts and figures on student enrollment; number of graduates; faculty and staff strength; professional linkages; international events; development projects; fiscal budget; as well as faculty development programmes. He informed that CIIT is focused on enhancing its research activities, and intends to achieve the target of publishing around 900 papers in the international ISI indexed journals by the end of 2013. He also informed that CIIT is soon to establish a Department of Health Sciences. Participants of the meeting were briefed about the Institute s efforts towards fostering academia-industry linkages through different platforms, such as, the Pak-China Business Forum, held annually. It was highlighted that the Institute plans to develop a similar forum, Pak-UK Business Forum, in collaboration with the Lancaster University, UK, and the British High Commission in Islamabad.

In his comments on the Rector s report, Prof. Dr. Atta-ur-Rahman appreciated the overall management of CIIT and considered the progress and growth of the university as the result of well-coordinated team work. He gave some suggestions for upgrading

the ranking of the Institute, including: reducing the ratio of faculty to student; establishing stringent criteria for hiring faculty; monitoring the quality of teaching, quality of publications (impact factor, research impact, citations, h-index), and faculty grading based on national and international grants received. He further advised for having 5 to 10 foreign visiting professors in each department; introducing courses on entrepreneurship; and allocating 30 % of the budget for research. He offered his assistance for establishment of a Technology Park at the Institute.

During the meeting, a presentation was also made by the Pro-Rector CIIT, Dr. Haroon Rashid on the Virtual Campus of CIIT, highlighting its future plans and the expected growth in five years. The Board agreed that this initiative of CIIT to facilitate distance education is a good one, however evaluation of the mechanism should be made on ensuring the quality of education and the academic programmes being offered.

The BoG also deliberated upon various administrative and financial matters of the Institute and took key decisions to this effect. It was decided that the BOG would be reviewing the matters related to the Business Incubation Centre; Centre for Policy Studies; and Faculty Development Academy of the Institute, under separate agenda-items, in its subsequent meetings.

COMSATS Internet Services

COMSATS Internet Services (CIS) at present has operations in seven major cities of Pakistan, including Islamabad, Peshawar, Lahore, Faisalabad, Sialkot, Multan, and Karachi. Since its establishment in 1996, CIS has served over a hundred thousand customers. The institutional and individual clientele of CIS consists of government organizations, private enterprises, foreign missions, NGOs, educational institutions, as well as individuals from different walks of life.

With an experience of 18 years of quality service as an ISP as well as in running smooth data centre operations, CIS is equipped with providing technical consultancy and training services, on request, to any Member State of COMSATS for launching a new ISP or for providing services similar to those offered by CIS in Pakistan.

The organizational and administrative matters of CIS are governed by its Board of Management, which is chaired by Executive Director COMSATS. Under the visionary leadership and guidance of its top management, CIS embarked upon constructing its own four-storey building, which has a covered area of 45,000 sq. ft. The construction work of the building continued throughout the year 2013, and is expected to be completed by the end of 2014. The building will have provisioning for housing a data centre; a tele-health resource centre; a training centre; and a software technology park.

Value-added and Core Services

In 2013, CIS officially launched three new services, branded as ComClinic (to provide tele-health consultancy); ComSpeed (to render Internet service through fiber optic connectivity), and ComMeeting (to provide web conferencing facility). These services are in addition to the existing seven services of CIS, collectively termed as The Colors of CIS . Core services of CIS are: Tornado® (Wireless broadband); Freedom (Wi-Fi DSL); and Hawaii (Domain, hosting, and VPS). Value added services of CIS include, Hurricane (On-demand broadband); Prism (Website development); Viacon (Video conferencing), and Comtrain (IT training courses).

Data Centres

CIS has several areas of expertise relevant to data, training, and video conferencing. CIS Data Centre provides hosting services on both Windows and Linux platforms. In 2013, CIS upgraded its Data Centre in Islamabad with new equipment, as well as launched a new Data Centre in Lahore.

The new Data Centre in Lahore is equipped with the advanced hardware and technical facilities. Virtual servers have been created at the Data Centre, as well as ComMeeting™ has been installed on a virtual server. The Data Centre in Lahore will be linked to the Data Centre in Islamabad to act as a disaster recovery (DR) site, and vice versa.

CIS became the first ISP to offer VPS (Virtual Private Servers) with local hosting in Pakistan in April 2012. VPS is at the infrastructure level of the cloud services stack. In future, CIS plans to offer cloud services not only at the infrastructure level, but also at software level. In the wake of the growing demand for cloud services, CIS is planning to launch a new service in 2014 to be branded as COMSATS Cloud . For this purpose, a large storage-area network and servers have already been installed at the Data Centre in Islamabad and cloud software will be installed in the next phase.

Software Development

The software development team of CIS, comprising web and application developers, has developed websites for many public and private organizations as well as for CIS. The team has developed applications in Java and Dot Net to support the organization s extensive administrative and financial operations, including billing system, helpdesk system, purchasing system and attendance system. It is planned to place these applications on COMSATS Cloud with an offer to corporate clients on monthly rental basis. The aim is to serve the clientele by giving them an option to save on their expenditures on expensive software licenses.

As part of its social service, CIS developed websites for the Civic Management and Sanitation Directorates of Capital Development Authority (CDA), Islamabad. CIS also developed a business-to-business (B2B) e-commerce platform, which will be used by exporters in Sialkot and other industrial cities of Pakistan to promote their products to both local and international buyers.

Training Centres

At present, CIS has training centres in Islamabad, Peshawar, and Faisalabad. CIS offers a wide range of IT training courses including CCNA and CCNP, Linux Administration, Windows® Administration, Microsoft Office®, Oracle® Database Administration, Web development, Graphics design, and ITIL® V3 Foundation. The two Video-conferencing Centres of CIS in Islamabad and Peshawar are being used by CIS and its customers for both video-conferences within the country and for communication abroad. In November 2013, CIS conducted a three day 3-way live auction for CDA between Islamabad, Lahore, and Karachi using video conferencing and multimedia equipment. CIS facilitation in this regard was appreciated by Chairman CDA through a Letter of Appreciation , acknowledging the hard work of CIS team for the successful execution of the auction that benefitted CDA a lot financially.

Bandwidth Growth

To ensure high uplink and downlink speeds for its customers, CIS procures bandwidth from multiple providers. In 2013, the bandwidth purchased by CIS grew by 55 % from 441 Mbps in 2012 to 686 Mbps in 2013. The bandwidth sold was almost twice this bandwidth (around 1.4 Gbps) because of bandwidth sharing. This growth in bandwidth reflects the growth of CIS as an ISP during 2013.

Tele-health Clinics

In April 2013, CIS launched its ComClinic project to provide tele-health service to marginalized rural areas. The project is being funded by the Ministry of Science & Technology, Government of Pakistan. Under this project, the first tele-health clinic in Gokina village, in the adjoining rural area of the capital city, Islamabad, was established in March 2013. The service provides an opportunity to the patients in the rural areas to get themselves examined and diagnosed by doctors sitting remotely in urban areas connected through video-conferencing and tele-health equipment. During the year, more than 7,000 free tele-consultations have been carried out for patients at the Gokina clinic. In December 2013, the second tele-health clinic of CIS

was launched in Swabi city of Khyber Pakhtunkhwa province of Pakistan.

In order to expand the service coverage of its tele-health programme, CIS plans to establish a network of three hubs and ten clinics by the end of year 2015. In this regards, more tele-health clinics in different villages of Punjab and Balochistan provinces of Pakistan will be setup.

COMSATS Tele-Health Programme

Tele-health activities under COMSATS Secretariat programme continued in 2013. Tele-health consultations were imparted to patients in Zhob and Skardu; training conducted at Islamabad; participation made at tele-health related events; support provided to partner organizations as well as the eHealth portal was further developed. The tele-health Centre at Zhob was established in 2011 by COMSATS and Human Development Foundation (HDF) Pakistan. Around 200 patients have been provided medical consultations by specialists in Dermatology and Gynaecology.

The Tele-health Centre at Abdullah Hospital, Skardu, also resumed its tele-consultation services in June 2013. A number of patients from the Skardu clinic consulted dermatologists through this clinic, which is the only medical facility available in the area offering the specialized consultations.

Training Imparted

From 22nd to 25th January 2013, a four-day training was held in Islamabad for the new Health Coordinator at Zhob Tele-health clinic and the project staff of CIS ComClinic . The training provided hands-on experience to manage real time tele-health consultations; handling tele-health equipment; and managing patient data on COMSATS ehealth web-portal. A special training session regarding tele-dermatology focused at developing an understanding of the common terminologies; acquiring relevant images, and carrying out biopsy sampling.

Activities as a Member of eHealth Association of Pakistan (eHAP)

COMSATS continues to be a part of eHealth Association of Pakistan (eHAP) through its representation on the eHAP Board. The Principle Medical Officer, COMSATS Secretariat, Dr. Azeema Farid, attended the 4th International eHealth Conference held in Karachi, in November 2013. The theme of the Conference was related to potential of mHealth (mobile health) in developing countries. Dr. Azeema while giving a presentation on the occasion, highlighted COMSATS Tele-health activities.

Participation in a Tele-Health related Seminar

COMSATS was represented at a seminar on 'Use of ICT in Health for Health Profession , in Islamabad, on October 22-23, 2013. The event was jointly organized by World Health Organization (WHO) and COMSATS Institute of Information Technology (CIIT).

COMSATS eHealth Web-portal

During 2013, efforts were made to identify and carry out suitable improvements and changes in the eHealth web-portal based on hands-on learning, experience and feedback. The portal serves as COMSATS Patient Information Management System (PIMS). The effectiveness of PIMS was enhanced by making it user-friendly, particularly from the point of view of medical specialists and doctors, as well as its administrators and other general users. In this connection, the web-interface of the portal has been given a new layout. Some pages of the web-portal have been redesigned, keeping in view standard tele-health practices. Tabs and features added to the web-portal include: COMSATS Tele-health Publications; COMSATS Tele-Health Partners; eHealth Photo Gallery; Feedback Form; eHealth Model and eHealth Flyer.

Support to Tele-health Project of COMSATS Internet Services

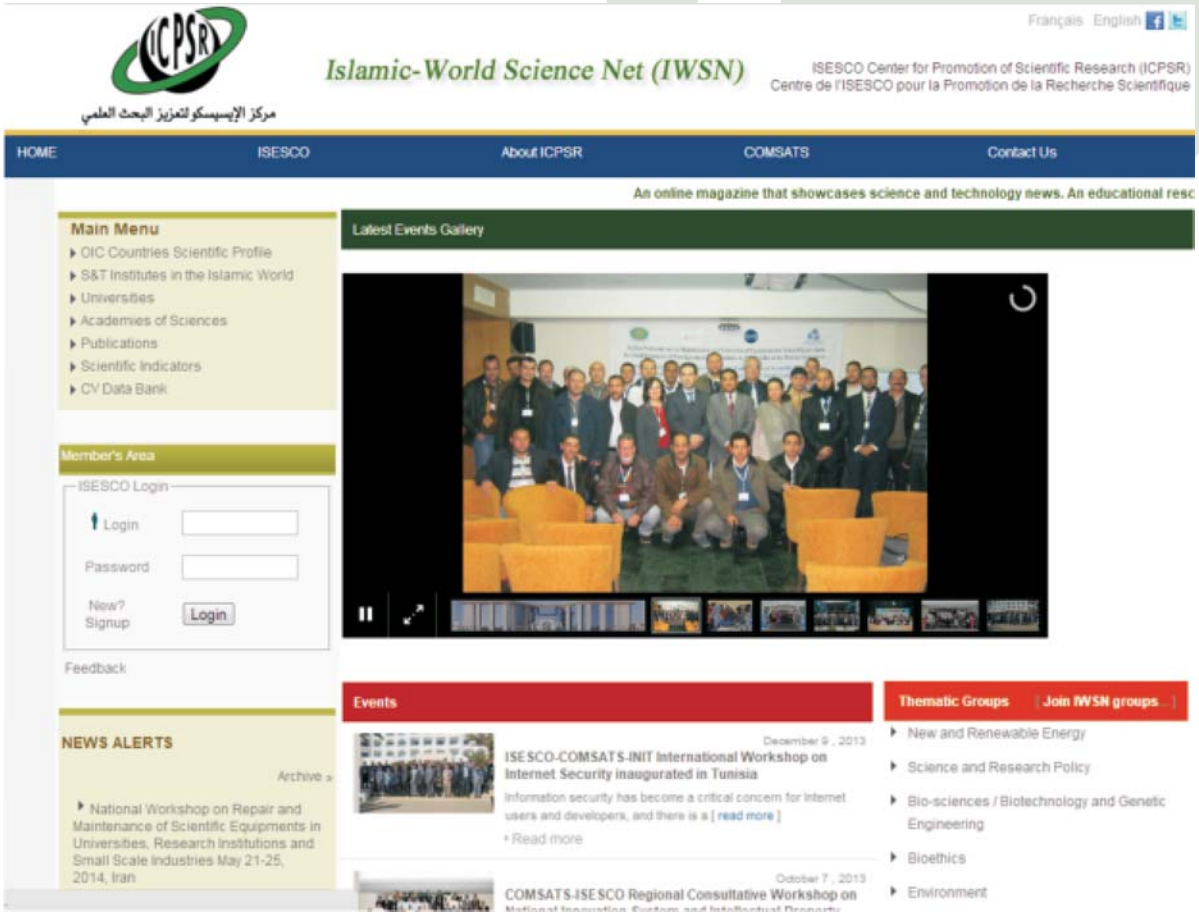
COMSATS Secretariat provided support for the Tele-health project (ComClinic) of CIS in the following areas:

Setting up of Tele-health clinic at Gokina village
Procurement of equipment
Hiring of new staff for expansion in clinics
Training of the new staff in handling tele-health equipment and use of patient information software.
Creating provision in COMSATS eHealth web-portal for new cities/locations where CIS Tele-health clinics are situated

Islamic World Science Net

In 2007, COMSATS and the Islamic Educational, Scientific and Cultural Organization (ISESCO) jointly initiated a project, entitled Islamic World Science Net (IWSN) , to enhance networking and cooperation among S&T researchers and scientific community in Islamic countries. In this regard, COMSATS developed and launched the IWSN web-portal, which since then is being maintained by a dedicated team of COMSATS.

The web-portal serves as a databank of information on S&T potential of the Islamic World. At present, the web-portal is hosting S&T country profiles of 57 OIC Member States; information of 698 R&D institutes; as well as profiles of 774 universities and 25 academies of sciences in these countries. The S&T profiles are based on fifty six (56) scientific indicators, under nine main categories, i.e. general, scientific, economic, education, healthcare, agriculture, industry, telecommunication and environment.



Moreover, the web-portal is also hosting a databank of CVs of scientists; as well as a number of publications, including research references, science journals and research papers.

The most important feature of the web-portal is the Virtual Scientific Thematic Groups , which were launched in March 2009. Currently, IWSN is hosting ten (10) Thematic Groups in various important scientific areas that are being administered by renowned scientists. These online thematic groups facilitate networking of researchers and scholars by providing them virtual platform. Some of the features of this virtual platform include: online discussion forums; one-on-one chat facility; news and document sharing; and group emailing. At present, IWSN has 3,673 registered users. The following table gives the current membership of the thematic groups.

Thematic Group Name	Total Users
New and Renewable Energy	488
Science and Research Policy	356
Bio-sciences / Biotechnology and Genetic Engineering	477
Bioethics	126
Environment	450
Mathematics	145
Water Management	239
Nano-Technology	255
Science & Technology Park Management	186
ICTs in Science and Technology	188
Others:	759

During 2013, as part of ISESCO-COMSATS Action Plan (2013) for IWSN, French version of IWSN web-portal was developed successfully under the guidance of ICPSR and subsequently launched. The new interface of the web-portal was also designed and uploaded to enhance the web-portal s outlook and improve the accessibility of the stored information on the it.

The dataset compiled through analytical tools shows a very encouraging trend of acceptability and popularity of the IWSN web-portal among scientists and students, not only from the Islamic World, but also from other developing and developed countries. This trend shows that 64,917 visits were made from 187 countries and territories. United States, United Kingdom, Canada, Germany and India are among the top ten countries, from which the web-portal has been accessed. Last year, the number of visits was 51,079 from 179 countries.

Scholarship Campaign

In order to effectively utilize the mechanism of South-South cooperation for human resource development, COMSATS encourages its Centres of Excellence and partner institutions to make scholarship offers to benefit researchers and students from COMSATS Member States. In the last couple of years the scholarship campaign was given a new thrust, and the Secretariat made calls to the Heads of Centres of Excellence from the platform of Coordinating Council. As a result, during the 16th Coordinating Council meeting, COMSATS Centres of Excellence, the COMSTATS

Institute of Information Technology (CIIT), Pakistan, reiterated its standing offer of 100 scholarships for graduate studies in various disciplines at its seven campuses in Pakistan. COMSATS Centre of Excellence in Iran, the Iranian Research Organization for Science and Technology (IROST), conveyed its willingness to offer seven PhD scholarship and five post-doctoral fellowships. These scholarships can be seen as these Centres willingness and contributions towards improving scientific and technological capacities of COMSATS member countries.

The announcement of the scholarship offer of CIIT was circulated by COMSATS Secretariat to the Focal Points in its member countries and received 29 nominations. Upon completion of necessary pre-requisites, the postgraduate scholarships were awarded to 10 nominees, who belong to Nigeria (8) and Sudan (2), for their MS studies in the various departments of CIIT, including Physics, Mathematics, Biosciences, Computer Science and Meteorology departments. CIIT scholarship covers 100% tuition fee; a 50% rebate on boarding/lodging and food charges; as well as upto 80% waiver on admission and graduation fees.

COMSATS Secretariat provided financial support to the 8 Nigerian students who came to Pakistan to commence their studies at CIIT by providing them air travel from Abuja (Nigeria) to Islamabad (Pakistan).

The Announcement of scholarship offer of IROST was also circulated to all the Centres of Excellence and Focal Points of COMSATS. In all IROST offered 7 PhD scholarships (4 fully and 3 partially funded (50 %)) and 5 post-doctoral fellowships. Subsequently six nominations were forwarded to IROST, out of which one has been accepted. COMSATS has been coordinating with IROST for completing the admission process of the accepted nominee.

10

PUBLICATIONS AND INFORMATION DISSEMINATION

- COMSATS Newsletter 118
- COMSATS Journal, Science Vision 120
- Foundation and Membership Documents 121
- COMSATS-TWAS Joint Publication: Excellence in Science 122
- COMSATS-NAM S&T Centre Joint Publication: Nanotechnology in the Edge of Convergence 123
- COMSATS Website and Other Information Material 123

formation dissemination and outreach is done by COMSATS through four 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 Newsletter was launched in 2009 as means for information dissemination about the international programmes and activities of COMSATS organizational bodies, and the scientific and technological potential available to the organization in the form of its Network of S&T Centres of Excellence.

During the year 2013, six issues of COMSATS Newsletter were published that included five issues of Volume-5 and one issue of the preceding volume. Apart from other sections covering the activities of COMSATS Secretariat and Centres of Excellence, there was a comprehensive report of the two meetings of statutory bodies of COMSATS, the Consultative Committee (2nd meeting) and the Coordinating Council (16th meeting), that were held in Accra, Ghana. Three issues featured special reports, two on COMSATS capacity-building events held on different occasions during 2013 in Sudan, Ghana, Tunisia, and Indonesia.


COMSATS Newsletter 1

Inside this issue

From the Executive Director's Desk


COMSATS' BRIEF AND ANNOUNCEMENTS

Under the section Profile of Head of Centre of Excellence , which was introduced in the 5th issue of the Volume-3, profiles of six Heads of COMSATS Centres of Excellence were given coverage in Volume-5. The profiles of following Heads of Centres of Excellence were published:

- Dr. Ashraf H. Shaalan, President NRC, Egypt;
- Dr. Eduardo Posada Flórez, Executive Director CIF, Colombia;
- Dr. A.B. Salifu, D.G. CSIR, Ghana;
- Dr. A. M. Elbadawi, D.G. IRCC, Sudan;
- Prof. Saliou Ndiaye, Rector/President of the Assembly of UCAD, Senegal; and
- Dr. G.A.S. Premakumara, Director/CEO ITI, Sri Lanka.

In Volume-5, COMSATS focus on S&T was portrayed through relevant articles covering a range of S&T related issues, some especially concerning the developing world. Topics of these articles were: Counting on Women in Development; Developing Nations should Avoid 'Slow Science ; Patent of RSS-Jordan for Preventing Galvanic Corrosion; Science s Role in Growing Diverse, Nutritious Food; and The Nobel Prize 2013 (Physics, Chemistry, Physiology or Medicine).

A section on biographies of eminent scientists from the developing world was introduced at the start of Volume-5. Remarkable achievements of six high-profile scientists were highlighted under this section. Biographies of the following veteran scientists were published in different issues of the volume:

- Dr. Abdus Salam (Pakistan);
- Dr. Ahmed Zewail (Egypt);
- Dr. Salimuzzaman Siddiqui (Pakistan);
- Dr. Bernardo Alberto Houssay (Argentina);
- Dr. Yuan Tseh Lee (Taiwan); and
- Dr. Max Theiler (South Africa).

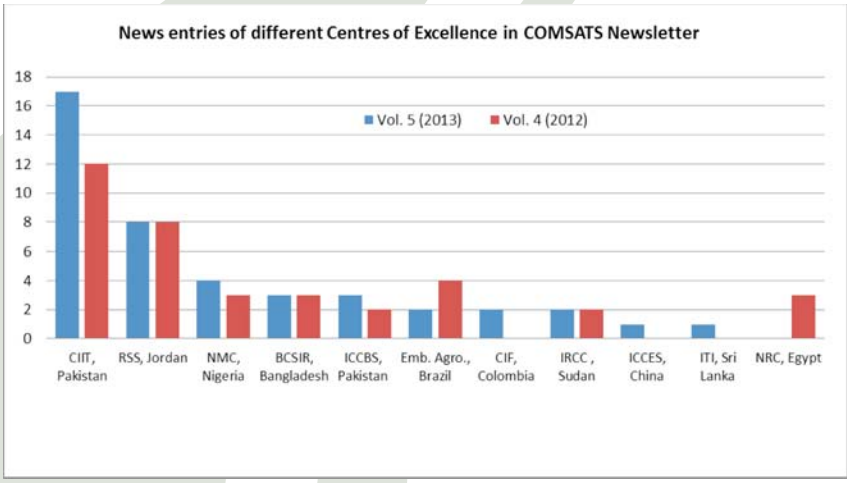
The section on Science, Technology and Development of the Newsletter was continued during 2013, keeping in view the interest of scientists, researchers, and policy-makers. The section featured important scientific findings in various fields of science and cutting-edge technologies from across the globe having potential to affect the socio-economic condition of the developing world.

The section covering the activities of COMSATS affiliated Centres of Excellence was continued on the basis of the contributions received in response to the regular calls made by COMSATS Secretariat, as well as through web-based search. A slight increase in the inflow of content contributions from the Centres was observed for Volume-5 as compared to Volume-4 of the Newsletter. This is reflected from the total number of news entries published in Volume-5.


ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

As per practice, the printed issues of COMSATS Newsletter (700 copies) were distributed, inter-alia, among COMSATS Focal Points, affiliated Centres of Excellence, partner and other international

organizations, R&D organizations, S&T institutions, universities and academies of sciences around the world. Copies of the Newsletter were also distributed amongst the participants of COMSATS sponsored S&T capacity building events. In order to enhance outreach and impact of the publication over a diverse audience, the circulation list of the newsletter was expanded by adding around 50 new recipients over the year. Contact details of the existing recipients of the newsletter were updated from time-to-time.



Free electronic subscription of the e-newsletter is planned to be initiated from 1st edition of the next volume in 2014.

COMSATS' Journal, 'Science Vision'

Science Vision is a bi-annual peer-reviewed journal of COMSATS that was launched in 1995 with an aim to highlight the important scientific and technological developments having a bearing on socio-economic conditions of the world populations. Seventeen volumes of the journal have been published to-date and efforts are being made for the timely publication of upcoming issues.

During 2013, extensive efforts were made by COMSATS Secretariat to invite papers in line with the focus of the journal. Call for papers were regularly made through COMSATS bi-monthly Newsletter; website of the journal, as well as through the one-page flyer of the journal distributed along with other publications of COMSATS. Correspondence was made with officials, representatives and members of various S&T institutions, R&D organizations, science academies, as well as academic circles from across the world to invite papers by introducing them to the journal, its focus and format, types of papers accepted, and broad instructions for authors. Requests were also made through these correspondences to spread the word about the journal, especially to the peers and colleagues in their respective departments. The Executive Director COMSATS as the Patron and Editor-in-Chief of the journal has been inviting papers for the journal at various international events and

fora. The Patron and Editors of the journal sent around 1,000 formal invitations during 2013 to the following focused groups:

Heads of COMSATS Centres of Excellence;
Members of COMSATS Technical Advisory Committee;
Rectors and Presidents of Universities from around the world;
Participants of COMSATS sponsored S&T Conference/ Symposia/ Seminars held during 2013;
Subject experts from various field of S&T;
Members of Scientific societies;
Authors of scientific publications in various journals;
Faculty members of universities of Pakistan.

Moreover, call for papers was made to a group of more than 2,100 faculty members of COMSATS Institute of Information Technology (CIIT), Pakistan, through the Institute s internal communication channel.

In 2013, an edition of combined volumes 16 and 17 was published and distributed among the COMSATS Focal Points, affiliated Centres of Excellence, R&D organizations, S&T institutions, universities and academies of sciences. Papers for this edition were received in response to the several calls for papers made and special invitations sent. This combined edition consisted of a total of 14 research/review papers, out of which 2 were reprints. A book review was also included in the issue to highlight a publication on energy issues in Pakistan. Papers in this edition were covered under three themes: Energy Options for the Developing World; Science Education and Capacity-Building; and Role of S&T for Sustainable Development.

Efforts in the second half of 2013 were focused on bringing out an edition of volume 18 (1&2), covering the period from January to December 2012, through a special arrangement of publishing selected papers presented in the fourth International Conference on Environmentally Sustainable Development (ESDev-2011), organized by COMSATS Institute of Information Technology (CIIT). The papers are undergoing necessary editing and reviewing process and the edition will be published in the first quarter of 2014.

The Publications Committee of the journal also deemed it appropriate to make use of a large resource of papers available to COMSATS in the form of unpublished technical papers presented at the 5th edition of International Conference on Environmentally Sustainable Development (ESDev-2013) that was patronized by CIIT. Selected papers from ESDev-2013 will be included in Volumes 19 and 20 of the journal.

Foundation and Membership Documents

In the later half of 2013, COMSATS Secretariat updated COMSATS Foundation Documents, which is a composite of eight different documents, keeping in view the amendments made to the Agreement to Establish COMSATS (Document-III) during the 2nd Commission Meeting (2012), and the revisions endorsed by the Coordinating Council to the Charter of the Network of International S&T Centres of Excellence (Document-VII) during its 16th meeting held in Accra, Ghana (2013). Major updates have been made to the two sub-documents (III & VII) mentioned above.

The amendments made to the international agreement to establish COMSATS has now been indexed to help keep a track of amendments made; amendments in the relevant Articles/clauses have been cross cited by giving amendment numbers beneath them; the revised/updated manuscripts of the articles/clauses have been separately presented for the convenience of reference following a prescribed syntax bearing the information on the number of amendment(s) made to the article/clause and the mention of the occasion, date and venue of the decision to this effect; as well as a clean draft of international agreement with updated articles/clauses has been added to the document-III. In order to maintain a similar layout and format, the Document VII of the Foundation Documents has been revised/updated.

Since one of the approved amendments made to international agreement referred to an accession agreement for the potential Member States, the Accession Agreement has been presented as an annexure to the Document-III. The Foundation Documents has also been given a new format for pagination in order to maintain the distinctiveness of the eight different documents.

During the process of updating the Foundation Documents, a need was also felt to create a new comprehensive document to be appended with the invitation to join COMSATS sent to potential Member States. The document designed for this purpose carries the title Membership Documents . It comprises: (a) Agreement to join COMSATS; (b) Agreement to Establish COMSATS (revised); (c) Charter of the Network (revised); (d) Joint Statement by the Participants of the 1st Meeting of COMSATS; (e) Resolution Adopted in the 2nd Commission Meeting of COMSATS; (f) Benefits and Obligations of joining COMSATS.

The revised Foundation Documents and new Membership Documents will be printed in January 2014 after necessary designing and composing.

COMSATS-TWAS Joint Publication: 'Excellence in Science'

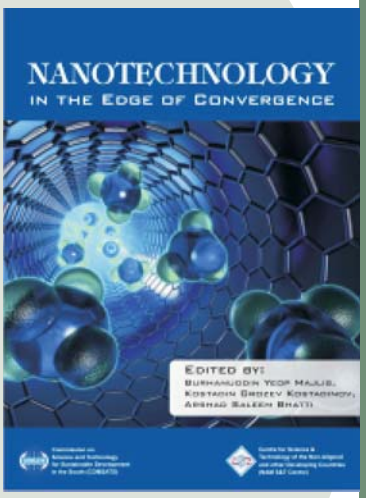
Under the COMSATS-TWAS collaboration for preparing the profiles of the Centres of Excellence of COMSATS, the second publication covering the Centro Internacional de Física (CIF), Colombia, was brought out during the second half of 2013. The content, compiled and edited by TWAS, covering scientific, technical and human-resource aspects of the Centre, was printed by COMSATS as per the standard specifications prescribed for the joint publication with TWAS.

One thousand copies were printed in Islamabad, Pakistan; out of which 700 were directly dispatched to TWAS (Trieste), while 100 were sent to CIF (Bogota) and 200 distributed by COMSATS among its Focal Ministries and Centres of Excellence in Member States, as well as to S&T institutions in Pakistan.

In order to widely promote the publication through COMSATS official website, a dedicated webpage on COMSATS official website was created for the series on Excellence in Science .

The Executive Director COMSATS and the Executive Director TWAS, during their visit to Brazil in November 2013, reviewed in detail the various options, in terms of S&T Centers from amongst COMSATS Centres of Excellence, that can be chosen for coverage in the next edition of the series.

COMSATS-NAM S&T Centre Joint Publication: Nanotechnology in the Edge of Convergence



In accordance with the understanding reached with NAM S&T Centre, COMSATS jointly published a book titled, Nanotechnology in the Edge of Convergence in May 2013. The publication was distributed by COMSATS Secretariat to S&T/R&D institutions, libraries and universities in Pakistan, as well as to the partner institutions of the event on Nanotechnology in the Edge of Convergence , held in Malaysia in November 2011. Earlier, the manuscript of the book was compiled and edited by NAM S&T Centre and composed, formatted and printed by COMSATS Secretariat.

Demand form for the book has been made available online on COMSATS official website. Moreover, a selected group of relevant libraries and institutions in Pakistan as well as the partner organizations in India and Malaysia were supplied with a copy each of the publication, along with an offer to purchase additional copies on subsidized rates.

COMSATS' Website and Other Information Material

COMSATS Headquarters has adopted a practice of giving a fresh look to its official website at the turn of each year. In this regard, the content on the website was thoroughly updated and revised for its layout and format. The homepage of the

website was given a new outlook to enhance its visual appeal.

COMSATS' brochure and one page flyer, titled COMSATS . At a Glance , were also revised for further improvement in their content, and more importantly to take into account the changes in the membership of various statutory bodies of COMSATS and its Network of S&T Centres of Excellence.

To keep the scientific community and its stakeholders abreast with the latest events co-organized by COMSATS in collaboration with its partner institutions, COMSATS Secretariat meticulously prepared publicity and information material, press releases as well as post-event technical reports.

11

FINANCIAL AFFAIRS OF COMSATS

- Accounts and Audit 126
- Contributions of Member States 126

Since the inception of the organization, COMSATS Secretariat s Finance and Accounts Department has been managing its financial activities, including the grant by the Government of Pakistan for meeting the overhead expenditure of the Secretariat, and the Annual Membership Contributions received from the Governments of COMSATS Member States.

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 the Management Committee for endorsement and Coordinating Council of COMSATS for approval.

M/s M. Yousuf Adil Saleem & Co., Chartered Accountants, conducted audit of accounts of COMSATS Secretariat for the financial year that ended on June 30, 2012. The Auditors Report and Audited Financial Statements of COMSATS Secretariat for the financial year commencing from July 1, 2011 and ending on June 30, 2012, 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 calendar year 2013, COMSATS received Annual Membership Contributions (AMC) from two Member States, China (US$ 20,000) and Sudan (US$ 20,000). The Government of Pakistan, being the host country of COMSATS Secretariat, contributes PKR 40 million (~US$ 400,000) per annum towards the running costs of COMSATS Secretariat based in Islamabad, Pakistan. In addition, the Government of Pakistan has also committed to contribute US$ 20,000/- per annum as its Annual Membership Contribution towards COMSATS. The amount of AMC for the financial year 2013-14 is expected to be received in the 1st quarter of 2014.

Deloitte.

M. Yousuf Adil Saleem & Co.
Chartered Accountants
24-D Rashid Plaza 1st Floor Jinnah Avenue
Blue Area Islamabad Pakistan
Ph: +92 (0) 51-2272636-8
Fax: +92 (0) 51-2274136
Web: www.myascodeloitte.com

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, 2012 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 Charterd 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.

(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 Charterd 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, 2012 and of the surplus, its cash flows and changes in funds for the year then ended.

Chartered Accountants

Audit Engagement Partner: Mohammad Saleem

Dated: 03 MAY 2013
Islamabad

COMMISSION ON SCIENCE AND TECHNOLOGY FOR
SUSTAINABLE DEVELOPMENT IN THE SOUTH (COMSATS) SECRETARIAT
BALANCE SHEET
AS AT JUNE 30, 2012

	Note	2012	2011
		(Rupees)	
NON-CURRENT ASSETS			
Property and equipment	4	27,829,121	29,172,893
Investment property	5	961,478	1,012,082
Investment in Joint Venture	6	658,113	750,142
Long term loan	7	61,216,834	62,565,363
Long-term security deposits		586,460	586,460
		91,252,006	94,086,940
CURRENT ASSETS			
Advances and prepayments	8	2,432,209	2,378,885
Short-term investments	9	21,781,788	18,179,063
Current portion of long term loan		1,200,000	600,000
Accrued interest on bank deposits		284,857	215,420
Other receivables	10	3,430,612	4,937,243
Cash and bank balances	11	37,428,362	22,578,443
		66,557,828	48,889,054
TOTAL ASSETS		157,809,834	142,975,994
FUNDS AND RESERVES			
Technical assistance fund	12	32,000,000	32,000,000
Accumulated surplus		73,807,863	64,775,784
		105,807,863	96,775,784
NON-CURRENT LIABILITIES			
Deferred grants	13	33,065,046	30,840,576
Deferred liabilities	14	11,573,149	9,434,567
		44,638,195	40,275,143
CURRENT LIABILITIES			
Creditors, accrued and other liabilities	15	4,173,776	5,925,067
Unearned income		3,190,000	-
		7,363,776	5,925,067
TOTAL FUNDS AND LIABILITIES		157,809,834	142,975,994
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, 2012

	Note	2012	2011
		(Rupees)	
INCOME			
Grant income	17	**40,748,421**	40,787,812
Other income	18	**13,583,889**	6,758,957
		54,332,310	47,546,769
EXPENDITURE			
Administrative expenses	19	**45,274,408**	48,734,761
Finance cost		**25,823**	24,613
		45,300,231	48,759,374
SURPLUS/(DEFICIT) FOR THE YEAR		**9,032,079**	(1,212,605)

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
Ms. Narmeen Khurram

DESIGNED BY
Mr. Imran Chaudhry

Annual Report 2013

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 Fisica (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
- 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
- TÜBITAK Marmara Research Center (MRC), Turkey

ANNUAL REPORT 2013

COMSATS Headquarters
Shahrah-e-Jamhuriat, G-5/2, Islamabad - 44000, Pakistan
Tel: (+92-51) 9214515-17, Fax: (+92-51) 9216539
E-mail: comsats@comsats.org, URL: www.comsats.org