



COMSATS Newsletter

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

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Participants of Round Table Meeting on 'Science Diplomacy in the South', Islamabad, 25th February 2015 (Page 05)

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From the Executive Director's Desk

With the present issue, COMSATS Newsletter has entered into the 7th year of its continuous publication on bi-monthly basis. Its regular and timely releases have well-served the objective of creating awareness about COMSATS' international programmes and providing a forum for interactivity among COMSATS stake-holders. Over the years, the Newsletter has also evolved to encompass new components with respect to its contents; however, the original format has mostly remained unchanged. In the light of comments received from our readers, it has been considered desirable at this stage to incorporate some readability enhancement features without affecting its signature complexion.

Needless to say that the focus of everything reported in the Newsletter would remain, as always, on the efforts made and activities undertaken by COMSATS to bring about socio-economic progress in the South through Science and Technology. Our operational strategy in this regard is based on creating partnerships with other forums

with similar objectives, in order to share resources and enhance outreach. This is manifested by the continuity of COMSATS' engagements with various international organizations as well as national institutions in the host country. Of particular significance are the evolving ties with UNESCO and strengthening of joint programmes with ISESCO.

COMSATS has been regularly holding awareness events on specific themes of UNESCO's Science Day for Peace and Development, while the UNESCO's International Year of Crystallography in 2014 was celebrated in Pakistan through COMSATS' support of a regional conference on 'South Asia Summit Meeting on Vistas in Structural Chemistry'. The current year is UNESCO's International Year of Light, for which preparations are underway in COMSATS Headquarters to hold a symposium and exhibition, as part of world-wide events projecting the role played by light-based technologies in modern societies.

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NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

MESTI-Ghana Launches Steering Committee for Convening the 3rd Commission Meeting of COMSATS

The third meeting of COMSATS' highest-level platform, Commission, has been scheduled to be held in October 2015. As the country currently holding the chair of the Commission, Ghana will be hosting its upcoming meeting. The Chairperson of the Commission, H.E. Mr. John Dramani Mahama, President of Ghana, announced the convening of the meeting last year, after a meeting with the Executive Director (June 2014). The process has been formally initiated as the Ghanaian Ministry of Environment, Science, Technology and Innovation (MESTI) has inaugurated a planning committee to oversee the preparations.

Dr. Alfred Sugri-Tia, Deputy Minister of MESTI, launched the committee on January 21, 2015. Speaking on the occasion, he said that the Government of Ghana recognizes the role of science, technology and innovation in economic and social development, and is making efforts to promote their due utilization. He urged the committee members to work hard to make the upcoming COMSATS Commission Meeting a success. The members of the committee include: Mr. Alhaji Rashid Pelpuo, Minister of State at the Office of the President in-charge Public Sector Development; Dr. Yahuza Gomda, Director of MESTI; Madam Beatrice Okpot of Ghana Immigration Service; Prof. Kwabena Aboa of Ghana Atomic Energy Commission; Dr. Eugene Atiemo, Centre for Scientific and Industrial Research; Mr. Nana Ama O. Asante of MESTI, Mr. Marcus Addo of State Protocol; and Ms. Mavis Kusorgbor of Ministry of Foreign Affairs and Regional Integration.

COMSATS Officials Meet the Visiting Deputy Director General ISESCO

On 21st February 2015, a luncheon meeting was hosted by Executive Director COMSATS for the visiting Deputy Director General ISESCO, H.E. Dr. Amina Obaid Ramadhan Alhajri. Dr. Alhajri was on her visit to Islamabad in connection with the Vice Chancellors' Forum on 'Universities in the Islamic World: Facing Global Challenges' (Page 15). The meeting also had the participation of senior officials of COMSATS Secretariat, and COMSATS Institute of

Information Technology (CIIT), including its Registrar, Prof. Dr. Izhar Hussain; Incharge of International Office, Dr. Arshad Saleem Malik; and Director, Planning, Development and Human Resource Development, Mr. Tahir Naeem (also Executive Director of the Inter Islamic Network on Information Technology (INIT)), as well as Prof. Dr. Mukhtar Ahmed, Chairman, Higher Education Commission (HEC) of Pakistan.

Matters discussed during the meeting related to expansion of cooperative ties between COMSATS and ISESCO for the benefit of their common Member States. The Executive Director overviewed the cooperation between COMSATS and ISESCO whereby the two organizations jointly organized 30 capacity-building events/activities since 2004, while six are planned to be held during 2015. He thanked Dr. Alhajri for her personal interventions with regard to identifying a suitable institution in Oman to host the 8th COMSATS-ISESCO National Training Workshop on 'Repair and Maintenance of Scientific Equipments in Universities, Research Institutions, and Small Scale Industries' to be held during 2015. It was informed that the series of workshops has helped the R&D organizations and universities of the

developing countries in building indigenous capacities for the upkeep of scientific equipment and instruments.

While highlighting the activities of COMSATS' International Thematic Research Groups (ITRGs), the Executive Director gratefully acknowledged ISESCO's financial support towards the research projects of ITRGs on 'Mathematical Modeling' (launched in December 2014) and 'Agriculture, Food

Security and Biotechnology' (planned to be launched in June 2015). The Executive Director recalled that COMSATS is maintaining the web-portal of ISESCO Center for Promotion of Scientific Research (ICPSR), and also offered support for maintaining the websites/web-portals of two other subsidiary organs of ISESCO, the Federation of the Universities of the Islamic World (FUIW), and the Islamic Body on Ethics of Science and Technology (IBEST).

Dr. Alhajri stated that ISESCO greatly values its cooperation with COMSATS, and wishes to continue the same in future. She informed that ISESCO is, currently, in the process of chalking-out its programmes for the years 2016-18. In this regard, Dr. Alhajri invited COMSATS to submit a proposal for a regional training programme for Gulf countries. She also



welcomed COMSATS' offer of maintaining websites of IBEST and FUIW, and advised to submit a formal proposal in this regard. She opined that this joint activity with Omanese institutions may also open avenues for Oman's accession to COMSATS as a Member State. Dr. Alhajri also shed light on the newly initiated scholarship programme of ISESCO, and expressed ISESCO's willingness to support more research projects of COMSATS under its other ITRG programmes.

Sri Lankan High Commissioner Briefed about COMSATS Programmes and Activities

The Executive Director COMSATS paid a courtesy call to the outgoing Sri Lankan High Commissioner to Pakistan, H.E. Air Chief Marshal (R) Jayalath Weerakkody, on 27th February 2015, at the latter's office in Islamabad. The Executive Director was accompanied by senior officials of COMSATS Secretariat, Mr. Tajammul Hussain, Advisor (Programmes); Dr. Majid Khan, Director (International Affairs); and Mr. Farhan Ansari, Sr. Assistant Director (Programmes).

The High Commissioner was briefed about the forthcoming 18th Meeting of COMSATS Coordinating Council to be hosted by the Industrial Technology Institute (ITI), in Colombo, Sri Lanka, on 12-13 May 2015. In his briefing, highlighting the significance of the annual meetings of COMSATS Coordinating Council the High Commissioner was acquainted with the key agenda items to be taken up during the Council meeting. The High Commissioner was also informed that COMSATS and ITI will jointly organize the International Symposium on 'Impacts of Atmospheric Extreme Events on Geo-surface in a Changing Climate' (14-15 May 2015), and the 4th Meeting of COMSATS' International Thematic Research Group (ITRG) on 'Climate Change and Environmental Protection' that will be attended by some Council members on the sidelines of the Council meeting.

While apprising the High Commissioner about the activities of COMSATS' ITRGs, Dr. Qureshi noted that ITI-Sri Lanka is a member of the Group on 'Climate Change and Environmental Protection' and 'Mathematical Modeling', whereas the Institute of Fundamental Studies (Sri Lanka) is a member of COMSATS' ITRG on 'Natural Products Sciences'. He further informed that over the years COMSATS has sponsored the travel of 30 Sri Lankan scientists for participation in various capacity-building activities. He also informed the High Commissioner



Executive Director COMSATS and Advisor (Programmes), during a Meeting with Sri Lankan High Commissioner in Islamabad, 27th February 2015

regarding COMSATS' capacity-building events scheduled for 2015, and welcomed the participation of Sri Lankan scientists and researchers. The Executive Director also reiterated the offer of postgraduate scholarships by COMSATS Institute of Information Technology (CIIT) to students/researchers from COMSATS' Member Countries, including Sri Lanka.

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

COMSATS to Organize Symposium in Connection with International Year of Light

In view of its international commitment and shared understanding on global development agenda with partner organizations like UNESCO, COMSATS has initiated its efforts to hold a symposium on the theme of UNESCO's International Year of Light and Light-based Technologies, in Pakistan. In this regard, a consultative meeting was held by the Executive Director COMSATS on February 20, 2015, at COMSATS Secretariat to plan and coordinate the activities for holding the event. The meeting had participation of Dr. Majid Khan, Director (International Affairs), COMSATS Secretariat and Prof. Dr. M. Aslam Khan, Advisor at Department of Physics, COMSATS Institute of Information Technology (CIIT), who were later designated members of organizing committee of the event.

After necessary discussions and consultations, it was decided that the event would be held in October this year and local and foreign subject-experts would be invited to deliver high-quality talks in line with the theme of the Year.

These resource persons will be invited, inter alia, from: National Institute of Lasers and Optronics (NILOP), Pakistan; Pakistan Institute of Engineering and Applied Sciences (PIEAS), Pakistan; Quaid-i-Azam University (QAU), Pakistan; National Centre for Physics (NCP), Pakistan; and R&D institutions from COMSATS' Member States, such as Middle-East Technical University, Turkey; as well as partner organizations, such as International Centre for Theoretical Physics (ICTP), Italy. Moreover, it was agreed that UNESCO; CIIT; Pakistan Science Foundation (PSF); Ministry of Science and Technology (MoST), Government of Pakistan; Higher Education Commission (HEC) of Pakistan; and Ministry of Federal Education and Professional Training, Government of Pakistan, will be approached to be the official partners for the event. The possibility of sponsoring a European scholar for the event is being explored with UNESCO and ICTP.

Human Resources Strengthened at COMSATS Secretariat and CIS

The human resource department of COMSATS Secretariat has been strengthened with induction of a new Director and Assistant Director International Affairs (I.A). The new Director (I.A), Dr. Majid Khan, has to his credit 15 years of professional experience in project management and teaching at tertiary-level. Dr. Majid holds a Masters in International Education (2003), and Ph.D in Education Policy and



Leadership (2009) from the University of Massachusetts, USA. Previously, he has worked for CIIT-Pakistan; Colorado State University, Fort-Collins, USA; Michigan State University East-Lansing, USA; and has contributed in World Bank and USAID funded projects. After due selection process, Mr. Abid Jan was inducted as Assistant Director (I.A). He holds MS in Environmental Sciences (2014) from Bahria University, Pakistan. Some of his research interests include studying impacts of climate change on glaciers and water resources.



Moreover, a specially constituted recruitment board chaired by Executive Director COMSATS appointed Mr. Amir Malik as the new Chief Executive Officer of COMSATS Internet Services, who assumed charge in February 2015. Mr. Malik holds a Masters degree in Computer Science and Telecommunication Engineering with Honors from ENSIMAG, INPG, France (2001). He has previously served as Member (I.T), Ministry of Information Technology (MoIT), Government of Pakistan; Managing Director, Pakistan Software Export Board (PSEB); and Chief Executive, Pak Datacom Limited, Pakistan. He has also contributed as the Head of Regulatory Compliance at Ufone (local telecom company of Pakistan); and as Director (ICT) for Pakistan Telecommunication Authority (PTA).



Feedback on COMSATS Newsletter

COMSATS Institute of Information Technology (CIIT) greatly values and appreciates the publication of bi-monthly COMSATS Newsletter. Through its wide circulation in 21 member countries, it is truly representing the international image of Pakistan and the developing world. Various Centres of Excellence, including CIIT, greatly benefit through the exchange of ideas, research activities and scientific and research profiles contained in the Newsletter. Numerous announcements made in the Newsletter and the powerful message by the Executive Director COMSATS, which regularly appear in each Newsletter clearly give the direction in which the scientific and research activities are progressing in the world in general, and 21 Members Countries across various continents in particular.

Dr. S. M. Junaid Zaidi, Rector CIIT, Pakistan

COMSATS Newsletter covers important news and activities of the Centres of Excellence (promoting their) research output and services. (Overall) the contents of the newsletter are satisfactory.

Dr. Widad H. Abdulhalium, DG IRCC, Sudan

Other Engagements of the Executive Director (Jan-Feb 2015)

- 08 Jan 2015 Visit to the office of Dawn newspaper in Islamabad and meeting with the Resident Editor concerning the media projection of scientific events.
- 15 Jan 2015 Participation in CERN-Pakistan Cooperation Steering Committee.
- 29 Jan 2015 Visit to Pakistan Academy of Sciences (PAS) and meeting with its newly elected President, Dr. Anwar Nasim, to enhance COMSATS-PAS cooperation.
- 02 Feb 2015 Lecture delivered to the young faculty members of Khuzdar University, Baluchistan, during their training at Faculty Development Academy (FDA) of CIIT in Islamabad.
- 22 Feb 2015 Participation in the Dinner hosted by the President of Pakistan in honor of delegates of the 3rd Vice Chancellors Forum.

SPECIAL SECTION: COMSATS LAUNCHES ITS SCIENCE DIPLOMACY PROGRAMME

COMSATS was created as a result of the growing awareness about widening developmental gap between the North and the South, as well as realization that S&T capacity is the real driver of economic progress for developed and developing countries.

For two decades, COMSATS has been endeavouring to sensitize the developing countries, particularly its Member States, about the importance of Science and Technology, mobilizing human and scientific resources for indigenous capacity building, and fostering bilateral and multilateral cooperation for inculcating a culture of science in the South. In order to further institutionalize its role as an advocate of S&T-led development, COMSATS launched its Science Diplomacy Programme on February 25, 2015, during a Round Table Meeting held in Islamabad. The launching of the programme has come as a realization of the organization's resolve in this regard that emerged during the discussions at the 17th meeting of COMSATS Coordinating Council held in May 2014.

The new initiative is geared towards improving international relations among developing countries and supporting their efforts to achieve foreign policy objectives through cooperation in Science and Technology. The programme, among other things, entails activities for science advocacy and popularization, formation of a think tank, establishment of COMSATS Centre for Science Diplomacy, organization of workshops and round table discussions for key stakeholders, as well as series of talks on scientific issues related to biodiversity, water conservation, energy, climate change, and disarmament, tailored to address the information needs of diplomats.

An account of the very first public projection of the programme, in the form of a Round Table Meeting on Science Diplomacy in the South, constitutes the following parts of this section:



The Chief Guest and the Executive Director Steering the Deliberations of Round Table Meeting

Round Table Meeting on Science Diplomacy in the South

A Round Table meeting was held to formally inaugurate the launch of COMSATS Science Diplomacy Programme in Islamabad. An inaugural ceremony constituted the first part of the meeting, which included: a statement from the Executive Director COMSATS, Dr. Imtihan Elahi Qureshi; a short presentation by the Coordinator of the Programme, Dr. Arshad S. Bhatti, who is Dean Faculty of Sciences, Department of Physics, COMSATS Institute of Information Technology (CIIT), Pakistan; and remarks by the Chief Guest of the event, Mr. Amjad Hussain B. Sial, Special Secretary (West Asia & Policy Planning), Ministry of Foreign Affairs, Government of Pakistan. While the later part of the event comprised of a discussion session, having a Keynote address at the start, from Dr. Peter McGrath, Coordinator of Science Diplomacy/Science Policy Programme of The World Academy of Sciences (TWAS), Italy.

Inaugural Session

The Executive Director COMSATS opened the meeting with his welcome remarks and touched upon various contours of science diplomacy. While elaborating on the prescriptions of Royal Society and American Association for the Advancement of Science (AAAS) for Science and Diplomacy, Dr. Qureshi said the interface of Science and Diplomacy occurs in three domains:

1. Science in Diplomacy: when scientific input is required to adopt specific foreign policy elements, which are in the best interest of a country, or scientific knowledge is needed to achieve foreign policy objectives (e.g., treaties pertaining to disarmament, climate change, spread of infectious diseases, agricultural produce, water resources, and the use of international physical spaces as well as activities in cyberspace).
2. Science by Diplomacy (AAAS Diplomacy for Science): applicable in situations in which scientists need a helping hand from diplomats, in facilitating the former's interactivity and collaboration with their peers all over the world.
3. Science for Diplomacy (or simply Science Diplomacy): banks on the universality of scientists' approach and the commonality of their quest to help transcend the sharpest of political, social and religious divisions, bringing people together, where other channels are blocked or marred by vested interests.

Dr. Qureshi informed that operationally COMSATS has been engaged with activities related to these facets of Science Diplomacy since its establishment in 1994. He emphasized the need for an adaptive model of Science Diplomacy that serves the interests and suits the indigenous capacities of

developing countries. He stated that COMSATS is well-placed to play a central role for Science Diplomacy owing to a large pool of scientific human resources available in COMSATS 19 Centres of Excellence (having over 15,000 researchers); its expertise for organizing workshops and training programmes for S&T capacity building; and the coordinating role the organization is playing for joint international research projects, aimed at addressing common issues in developing countries under the umbrella programme of International Thematic Research Groups .



The First Session of the Round Table Meeting in Progress

The South will have to safeguard its interests in ways that are consistent with principles of peaceful coexistence. In practice, all aspects of Science Diplomacy will take shape in the South in a distinctly different manner, at least at the operational level, as compared to the West.

Dr. Imtihan Elahi Qureshi, Executive Director COMSATS

Dr. Arshad S. Bhatti made a presentation entitled Science Diplomacy: A New Facet in the International Cooperation and Relations . Apart from introducing the key features of the Programme, he cited the examples of international collaborative research projects, which were bringing together nations with long outstanding political differences.

Science diplomacy is not just limited to scientific exchanges rather when political relations between two nations are strained or broken, interactions between research workers can give them a way to keep talking and to building trust on areas of mutual and global concern strong scientific networking among developing countries can pave the way for socio-economic development.

**Mr. Amjad Hussain B. Sial,
Special Secretary (West Asia & Policy Planning),
Ministry of Foreign Affairs, Government of Pakistan**

The Chief Guest, Mr. Sial, considered the launching of the Programme a timely initiative in key area of national interest. He opined that it is imperative for developing nations to remain abreast with latest scientific advances for objective and informed decision-making in the face of emerging national and trans-boundary challenges. Mr. Sial assured his Ministry's support to COMSATS for its future activities and the programmes.

Designation of Science Ambassadors

After formal announcement of launching of the Programme,

five science experts and academicians were designated as COMSATS Science Ambassadors : Dr. Arshad S. Bhatti (Physics); Dr. Athar Hussain (Climate Change); Dr. Raheel Qamar (Biotechnology); and Dr. Nasrullah Khan (Energy), from COMSATS Institute of Information Technology (CIIT), as well as Dr. M. Sabieh Anwar (Engineering and Technology) from Lahore University of Management Sciences (LUMS), Pakistan. While, Dr. I.E. Qureshi was unanimously conferred the title of Science Ambassador Emeritus in the area of Science Diplomacy .

Keynote Address and General Discussions

In his keynote speech through Skype, Dr. Peter McGrath considered Science Diplomacy crucial for finding solutions to the cross-boundary problems such as climate change, pollution, infectious diseases, fisheries, and water resources. He opined that diplomacy and science results in finding common grounds among nations despite the political differences and hostilities. Highlighting some activities under the TWAS Science Diplomacy Programme, he noted that Science Diplomacy as a movement has been taking root in and among developing countries for several years. As examples of state-level Science Diplomacy initiatives from across the globe, Brazil and Cuba were especially mentioned for their success with Agriculture Diplomacy and Health Diplomacy , respectively, in strengthening their international relations and bringing prosperity in the region. For the organizational-level initiatives, the roles of COMSATS; ECO-Science Foundation; Economic and Social Commission for Western Asia (ESCWA); and Nelson Mandela African Institute of Science and Technology (NM-AIST), were highlighted.

Dr. McGrath opined that identification of important regional issues for inter-state coordination is pre-requisite for Science Diplomacy to take firm roots. He recommended that, to begin with when circumstances may not be very conducive for scientific diplomatic exchanges and practices, relatively lower level exchanges of young scientists could help create the desired networking. Over time, these



Glimpses of the General Discussion Session of the Round Table Meeting

scientists could acquire necessary expertise and knowledge to partake in diplomatic and policy-level decision making. Acknowledging the existence of restrictions by developed countries on scientists from developing nations who aspire to specialize in dual use technologies, he opined that continued efforts through science diplomacy are needed to bring about the desired change of mindsets. Appreciating the role of COMSATS in S&T-led development in the South for over 20 years, he considered the organization an important international player in the field of science diplomacy and highlighted a need for closer cooperation with AAAS and TWAS to take Science Diplomacy as a discipline to COMSATS Member Countries.

An interactive general discussion session resulted in a free exchange of concerns, suggestions, and ideas for the Programme. Designated Science Ambassadors shared brief statements regarding their aspirations for the COMSATS Science Diplomacy Programmes. Dr. Anwar Nasim, President of Pakistan Academy of Sciences (PAS) steered the discussion, who was of the view that the first step to having a successful Science Diplomacy strategy could be identification of the right set of individuals with necessary commitment, whom he termed Non-Government Individuals (NGIs). Ways were discussed to make the COMSATS Science Diplomacy Programme effective and how it can be tailored to addressing the needs of the developing countries. Among the distinguished participants of this discussion were: Prof. Dr. Zabta Khan Shinwari, Secretary General PAS; Mr. Amjad Hussain, Joint Scientific Adviser (IL), Ministry of Science and Technology, Government of Pakistan; Ambassador Fauzia Nasreen, Advisor/Head, Centre for Policy Studies, CIIT; Ms. Sadia Malik, Assistant Director (IC), Pakistan's Ministry of Foreign Affairs, and senior officials and academics from COMSATS Secretariat and CIIT.

The participants discussed matters ranging from popularization of science, quality of science education at the grass-root level, to resolving the regional disputes with neighboring countries through effective diplomatic means

backed by sound scientific expertise. Dr. Sabieh Anwer was of the opinion that media can help for popularizing science, and serve as effective means for science advocacy. Dr. Raheel Qamar, Dean ORIC-CIIT, suggested that we must focus on key national issues, such as management and sharing of water resource by Pakistan and India, which is severely affecting the two countries relations. In order to complement the initiative of Science Diplomacy, Dr. Arshad Saleem Bhatti recommended having parallel component of addressing the issue of poor science communication. Noting the general insensitivity of media of the developing world on scientific issues, Dr. Qureshi said that changing the mindsets is a colossal task, serious pursuit of science diplomacy may help address this issue, among others. Dr. Shinwari suggested adoption of a two-pronged strategy; to continue seeking scientific cooperation from the developed countries, as well as to start benefiting weaker neighboring countries. Dr. Sajjad Mohsin, Dean Faculty of Information Sciences and Technology, CIIT, identified the need to making science an enjoyable and pleasant learning and sharing experience in order to facilitate science popularization. Dr. Aslam Khan, HEC Foreign Professor at CIIT, proposed that developing countries should first build credibility in the areas of their comparative advantage,



Dr. Qureshi Receiving the Ambassadorial Credentials from Mr. Amjad Hussain B. Sial

based on which they can hold negotiations on diplomatic fronts. Dr. Shahid A. Shaheen, HEC Foreign Professor at CIIT, emphasized the need to focus on energy issues of Pakistan. Ambassador Fauzia Nasreen of CIIT showed her desire to see some projects related to climate change and health to flourish under the Programme. Mr. Paras Ali, CEO weekly Technology Times, conceded the lack on part of the media in playing its due role in popularization of science, and expressed optimism that the typical behavior of media will change as the quality of education improves in the coming years.

Concluding of the Round Table Meeting

The participants of the meeting showed satisfaction over the outcomes of the meeting. In his concluding remarks, Dr.

Qureshi summed up the key deliberations made during the Round Table Discussion and noted how scientific community can play its due role in building a prosperous society, through science popularization, advocacy and diplomacy. A vote of thanks was served by the Executive Director COMSATS to the Ministry of Science and Technology, and Ministry of Foreign Affairs, Government of Pakistan; PAS and some universities in Pakistan for pledging their support for this timely initiative of COMSATS.

COMSATS Science Diplomacy Programme would initially take up Science Communication for the benefit of decision makers in Pakistan. A short-term strategy has already been chalked out, which would involve sensitizing members of Ministry of Foreign Affairs, regarding key scientific issues confronting Pakistan's foreign policy.

Profiles of COMSATS Science Ambassadors

Science Ambassador Emeritus - Science Diplomacy

Dr. Imtihan Elahi Qureshi, Executive Director COMSATS

Dr. Imtihan Elahi Qureshi holds a Ph.D (1979) in Physics from the University of Surrey (Guildford, U.K.). During his career, he had been posted as Minister (Technical) in the Permanent Mission of Pakistan to the United Nations in Geneva. As a research scientist, Dr. Qureshi has travelled widely and established research collaborations in basic sciences in different institutions in Europe, China and Latin America. He is a recipient of Pakistan Government's Civil Award, Tamgha-i-Imtiaz.



Science Ambassador - Physics

Dr. Arshad Saleem Bhatti, Head of Department, Physics, and Dean Faculty of Science, CIIT Pakistan

Dr. Bhatti, holds his Ph. D degree from University of Cambridge, (Cambridge, UK) in Micro and Optoelectronics. He has been associated with COMSATS Institute of Information Technology since 2003, where he is presently working as Dean, Faculty of Science. He is also a Senior Associate of the Abdus Salam International Center for Theoretical Physics (ICTP), Trieste, Italy. He is a recipient of national civil award of Pakistan, Tamgha-i-Imtiaz.



Science Ambassador - Energy

Dr. Nasrullah Khan, Professor, CIIT, Pakistan

Dr. Nasrullah Khan holds a Ph.D (1991) Degree from University of Essex (UK). He is currently serving as a Professor at Electrical Engineering Department of CIIT, Islamabad. His research interests include Renewable Energy, Development of Lasers, Electric Power Quality, Laser Ignition System, Atmospheric Electricity, Fiber Optic Sensors, and Protective Relaying.



Science Ambassador - Biotechnology

Prof. Dr. Raheel Qamar, Dean ORIC, CIIT, Pakistan

Prof. Dr. Raheel Qamar holds a Ph.D in Biochemistry and Molecular Biology from the University of North Texas in USA. Prof. Qamar laid the foundation of modern research in the fields of population and disease genetics in Pakistan. He also introduced Bioinformatics in the country by conducting different workshops and starting one of the first undergraduate programmes in Bioinformatics in Pakistan. Prof. Qamar was conferred Pakistan Government's Civil Award, Tamgha-i-Imtiaz in 2010.



Science Ambassador - Engineering and Technology

Dr. Muhammad Sabieh Anwar, Associate Professor, LUMS, Pakistan

Dr. Muhammad Sabieh Anwar holds a D.Phil in Physics from Oxford University (UK) in 2004, where he studied as a Rhodes Scholar from Pakistan. Dr. Sabieh's current research interests include quantum control; spin mechanisms in nanomagnetic materials; nanotechnology; spintronics; magnetic resonance and physics education. Dr. Sabieh is recipient of ICTP Physics Prize for the year 2008, as well as Aizaz-e-Sabqat from the Government of Pakistan.



Science Ambassador - Climate Change

Dr. Athar Hussain, Professor Department of Meteorology, CIIT, Pakistan

Dr. Athar Hussain is currently serving in Department of Meteorology, CIIT, Islamabad, as a Professor of Meteorology. He holds a Ph.D in Meteorology from University of Missouri, (Columbia, USA) and a Ph.D. in Physics, from Quaid-i-Azam University, Islamabad. His expertise in climate science includes the application of statistical and dynamical techniques to diagnose climate change signatures.



OPINION: NEW DIMENSIONS IN SCIENCE COMMUNICATION

Edward W. Lempinen*

Hollywood is fascinated by journalists. For more than a century, in thousands of films, they have been figures at the centre of drama – police reporters and political reporters, reporters investigating corruption or covering a distant war. Often they're brash and irreverent. They might struggle to get the story, but they're tenacious and even courageous. A curious point, though is that these film heroes are rarely, if ever, writing about science.

For many years my own career followed a similar script. In my youth, I loved science; later, as a reporter and editor, I focused more on crime and justice, politics, the mistreatment and neglect of society's most vulnerable people. My portfolio did not include science. That all changed quite suddenly. In the middle of my career, an opportunity arose to work for the American Association for the Advancement of Science; as part of the job, I would write for the journal *Science*. I was ready for a change, and this change seemed very exciting. Standing on the threshold of a new career, I imagined some dream assignments: writing about life in the depths of the sea; the exploration of other planets; the neural mysteries of mental illness; robots and artificial intelligence.

And I did write about those topics, sometimes. But soon the currents of life carried me to a place I had never imagined: the intersection of science, government policy, and diplomacy. Was I disappointed? No, far from it. Every day, I saw how science and policy were essential to addressing some of the most serious challenges of our time, from hunger and disease to climate change and security. I saw that, in communities all over the world, science and policy could do so much good.

In time, these interests led me to TWAS – The World Academy of Sciences. The Academy was founded in 1983 by Abdus Salam, Pakistan's Nobel laureate in physics. On the topic of science for development, Salam was a visionary thinker and an eloquent writer. There is one inspiring quote of his that distills the essence of TWAS's mission: "With man's recent mastery of science and technology," Salam wrote, "there is no physical reason left for the existence of hunger and want for any part of the human race."

TWAS today has nearly 1,150 elected Fellows from more than 90 countries, more than 30 of them from Pakistan; they are the elite of science in the developing world. TWAS

provides research grants and Ph.D fellowships. Its awards recognized scientific excellence in the South. It is engaged at the highest levels of policy and diplomacy. Communication, too, is central to the mission.

Smaller World, Bigger Challenges

In the most conventional sense, serious journalism is often about things going wrong. It is about disaster, breakdown, conflict, and about efforts by government and other bodies to fix things.

Science journalism has had some freedom to operate outside of this problem/solution paradigm. Think of research into cosmology, or particle physics, even the deep workings of the brain. More than most news disciplines, science journalists have the license to explore subjects apart from an immediate conflict or crisis; they can write about research that has only far-off benefits, or no direct application at all.

While the Higgs boson is certainly interesting and significant, it is not going to prevent war or feed hungry children. But there is an increasing awareness that humanity's most pressing problems have causes and solutions related to science, and these challenges are often regional or global in nature. Think of Ebola and avian flu, or climate change, the declining health of the oceans, and the need for vastly improved agricultural production and water sources to support a soaring human population.

Given these extraordinary challenges, it is essential that science journalism develops a new perspective, and begins to work in new dimensions.

Apart from research, we need to focus more closely on three areas: science policy, science education and science diplomacy. Though it may not be apparent superficially, each of these is deeply connected to the life and future of our communities. There are excellent science journalists who work in these fields, and policy areas, such as climate change, receive sustained and often excellent coverage. Too often, however, science policy is not a priority for coverage.

In most countries of the world, politics and government are central preoccupations of journalists. But it seems curious

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that a political journalist can spend many years writing about campaigns and elections and partisan conflict while writing very little about policy – about problems and solutions – and even less about science policy. Often, it seems, science policy is simply not on the journalists' radar.

Consider a story last year in the Guardian, a very good UK newspaper. To mark the 20th anniversary of the 1994 Rwandan genocide, the writer surveyed the country's efforts to rebuild: Effective government; Foreign partnerships; and a bigger role for women. Education was mentioned, but only briefly. Science and technology were not acknowledged at all, even though Rwanda has been a global pioneer in the application of science and technology for economic and human development.

In the coverage of science policy, research and development are a fundamental reference point: How much is the government spending on R&D? And where, specifically, is that investment being made? Beyond that, there is a whole universe of science policy, and a universe of data and expertise to explore. Often, such analysis is focused on the big picture, the world seen from a very high altitude, far above the ground-level struggle and conflict of everyday life. Still, though, it can be the source of vitally important stories.

The UNESCO Science Report, for example, is published only every five years, but it is a richly detailed volume that documents the challenges and advances of global science, especially in the developing world. It is not light reading; few would describe it as exciting. Consider this passage from the 2010 volume:

“South Asian countries continue to suffer from low human development, gender discrimination and social inequalities... the massive income and productivity gap between South Asian countries and Singapore, the Republic of Korea or other developed economies, can primarily be attributed to the lack of technological progress in these countries.”

The language is abstract and academic, but it is a remarkable statement and it could serve as the basis for many news articles. Why is there a lack of technological progress in South Asia? How does this cause a massive income and productivity gap? How does this dynamic play out in communities, schools and businesses? What are the human costs? What are the solutions?

A journalist who does not dive deep into science policy might never find this story. Certainly it takes creativity and time to translate abstract policy into profoundly human stories, but that is the art – and responsibility – of communication.

Have You Heard About the Revolution?

At mainstream news organizations in the United States, and likely in many other nations, education is not a high-prestige assignment; education policy receives only a fraction of the coverage devoted to politics or the economy. And yet, the importance of education policy rivals that of any other subject.

That is especially true today, a global revolution is reshaping education, both in the developed world and in developing nations. The fate of nations is literally at stake; for those that don't, or can't, keep pace with this revolution, there is a risk that they and their children will be left behind.

Pakistan offers a remarkable example of a nation that has recognized the central importance of education, and especially science and engineering education. According to the UNESCO

2010 Science Report, Pakistan's investments in higher education between 2002 and 2008 grew almost 2,000%. Much of that investment went to modernize research infrastructure in universities and to support research in biotechnology, engineering, and information and communication technology.

By itself, that pattern suggests a number of fascinating articles, perhaps extended coverage of the impact, the success, and continuing challenges. But the UNESCO report contained this additional note: “Overall, Pakistan, Bangladesh and Sri Lanka seem better at producing basic knowledge than commercializing it.” Put another way, countries are making significant investments in education, but the investment is not paying off as it should. Clearly, this is an urgent area for journalistic exploration. Meanwhile, even as countries are demonstrating commitment to education, a parallel revolution may, in time, transform the science classroom. It is a revolution driven by neuroscience and technology.

Traditional 20th century education assumed that the brain is like a sponge. If a teacher simply poured on facts, the student would absorb them. But new research says this approach is inefficient. Teaching has to focus on brain development, literally at the level of neurons, at the molecular level of proteins. How best to do this? Through

A journalist who does not dive deep into science policy might never find this story. Certainly it takes creativity and time to translate abstract policy into profoundly human stories, but that is the art and responsibility of communication.

engagement and practice that stimulates neuron growth.

A futuristic vision emerges: The teacher is no longer master of the classroom, but rather a coach, interacting with students, challenging them, guiding them. Equipped with tablets, smart phones and other technology, the students are doing their own research and experiments. They are exploring, evaluating. They make mistakes, but that's ok – mistakes are learning opportunities.

Researchers are finding that the new approach can significantly improve learning. But in the developed world, and in the developing world, how many people even know about these revolutionary discoveries? And yet, people care about schools, and it is human nature to be interested in the future. Clearly, this could be an important job for a science communicator.

Science as a Foundation for Peace

Early in 1972, Chinese Chairman, Mao Zedong hosted U.S. President, Richard Nixon in Beijing. The nations had been rivals, and had little contact for over 20 years. But by the end of the meeting, there was an informal agreement for the two nations to engage in a number of areas, including science cooperation.

Over many years, this engagement evolved into a sustained, mutually beneficial relationship that fueled economic growth, advanced science, and eased global tensions. Science diplomacy changed the world. In more recent years, we have seen a new wave of science diplomacy – and not just in the province of superpowers.

Scientists in Palestine and Israel have ongoing research projects. Scientists and diplomats in East Africa have reached across borders and transcended political tensions to discuss joint efforts in science-related higher education. A similar collaboration brought women scientists and engineers from across the Islamic world to Kuwait to share experiences and challenges, and to build multinational networks.

Pakistan itself has strong interest in science diplomacy. In 2012, a summit with India produced an agreement on research collaboration, student and faculty exchanges and joint conferences. In 2013, the Stimson Center, a U.S. NGO focused on international affairs, published "Connecting the Drops", a roadmap that could guide the two nations to productive sharing and management of the Indus River basin and its vast resources.

Pakistan's esteemed science and education leader and TWAS Fellow Atta-ur-Rahman said:

"Our future must not be hostage to our past... If we can move on cultural exchanges and trade links, why cannot we go ahead with joint efforts in education, science and technology?"

Science diplomacy initiatives are important for science and for peace – and for that reason, they are important to our communities. But if science writers are not aware of diplomacy, and if diplomatic writers are not aware of science, then they will miss these important developments. When writers miss such a big story, that's a great loss for readers and viewers everywhere.

contd. from page 1 ... From the Executive Director's Desk

The partnership with ISESCO has now entered into a new phase, whereby the International Thematic Research Groups launched by COMSATS are getting financial support by the organization. During the visit of Deputy Director General ISESCO, H.E. Dr. Amina Obaid Ramadhan Alhajri, to Islamabad, a luncheon meeting was held on 21st February 2015 in order to discuss the on-going collaboration between the two organizations and explore the prospects of expansion of joint cooperative activities (page 2). The visiting dignitary showed keen interest in expanding ties with COMSATS Centres of Excellence in developing countries. In particular, she acknowledged the resourcefulness of COMSATS Institute of Information Technology (CIIT) in organizing mega events, such as Vice Chancellors Forum (page 15), in which more than 150 Vice Chancellors, from Pakistan and abroad, participate annually for a two-day moot, in order to discuss matters

related to pedagogical cooperation and new challenges in higher education.

COMSATS also keeps close liaison with Pakistan Academy of Sciences, Higher Education Commission of Pakistan and Ministry of Foreign Affairs, Government of Pakistan. Along with the Ministry of Science and Technology and CIIT, these national bodies in the host country provide invaluable academic and administrative help to the organization. Recently, their support was sought to launch COMSATS Science Diplomacy programme, which was approved during the 17th Coordinating Council meeting held in Tehran, last year. Full coverage of this initiative is included as a special section in this issue of the Newsletter (pages 5-8). With the improved layout and wider coverage, it is hoped that the 7th volume of the Newsletter will attract greater attention of scientists and administrators in COMSATS member countries. There is always room for further improvements, for which we look forward to receiving comments and suggestions from our worthy readers.

S&T INDICATORS OF MEMBER STATE

In Spectrum: Democratic Socialist Republic of Sri Lanka



Sri Lanka has maritime borders with India to the northwest and the Maldives to the Southwest. The country has a documented history that spans over 3,000 years. Its geographic location and deep harbours render it great strategic importance from the time of the ancient Silk Road through to World War II.

The country has had a long history of international engagement, as a founding member of the South Asian Association for Regional Cooperation (SAARC), the United Nations, the Commonwealth of Nations, the Group of 77 (G77), and the Non-Aligned Movement. It is the only country in South Asia that is currently rated "high" on the Human Development Index (HDI) far surpassing the neighboring countries.

Sri Lanka continues to experience rapid economic growth following the end of the 26-year long conflict with the Liberation Tigers of Tamil Eelam (LTTE). The government has been pursuing large-scale reconstruction and development projects in its efforts to spur growth in war-torn and disadvantaged areas, develop small and medium enterprises and increase agricultural productivity. According to the CIA World Factbook, the Sri Lankan economy is a services oriented economy contributing a share of 57% of the country's GDP, followed by Industry (32.4%) and Agriculture (10.6%). The performance of Sri Lanka in education and human development has led to a shift from the old 'plantation' and agrarian base to a modern services base.

Typically the prime industries in Sri Lanka include processing of agricultural commodities; telecommunications, while increasingly there has been growth in insurance, banking, tourism, shipping, clothing, textiles, cement, petroleum refining, information technology, and construction. This supports major agricultural outputs of the country.

According to the UNESCO World Science Report (2010), like most South Asian countries, Sri Lanka faces a challenge in improving the quality of education at all levels. The challenge is particularly acute for higher education, where issues encompass not only improving access, quality and relevance but also wider reforms to introduce international standards, better management and governance, as well as greater flexibility and adaptability to meet labour market demands. Sri Lanka loses many of its highly qualified professionals to brain drain. According to a World Bank study (2009), Sri Lanka's higher education enrollment of 6% of the age cohort is underestimated.

The recent promotion of distance education programmes is expected to have increased access to higher education to almost 23% of the 18-25 year age group. The quality and relevance of higher education remains a matter of concern, as only few institutions are providing education that is up to international standards. Research efforts are also concentrated in a few universities, the Industrial Technology Institute (ITI), and some research institutes conducting agricultural research. The Sri Lankan government has realized the importance of human capital for survival in an increasingly competitive, knowledge-based global economy. The higher education and research infrastructure currently comprises 62 institutions. The 19 state-controlled universities include one university working under the Ministry of Defense. There are 11 R&D centres, while the rest of the infrastructure is composed of colleges and institutes.



Socio-economic and S&T indicators of Sri Lanka

Years	1980	1990	2000	2010	2013
Total Population (Millions)	14.75	17.02	19.10	20.65	20.48
GDP per capita (current US\$)	272.91	472.09	854.93	2400.02	3279.89
GDP per capita growth (annual %)	3.87	5.21	5.74	6.95	6.44
Trade (% of GDP)	87.02	68.24	88.64	53.06	54.47
High-tech exports (% of manufactured exports)	-	0.60	3.09	1.03	0.92*
ICT goods exports (% of total goods exports)	-	-	2.79	0.46	0.50*
R&D expenditure (% of GDP)	-	-	0.14	0.16	-
Patent applications, nonresidents	67	83	250	235	-
Patent applications, residents	11	23	71	225	-
Researchers in R&D (per million people)	-	-	135	103	-

Source: World Bank Indicators (Retrieved: February 2015)

Note: Data taken from year *2012 and ** 2011

An Interview with the High Commissioner of Democratic Socialist Republic of Sri Lanka to Pakistan, H.E. Air Chief Marshal (R) Jayalath Weerakkody

Please briefly introduce Sri Lanka as an important member of the world community; its current standing in terms of Human Development Index and other socio-economic indicators.

The Democratic Socialist Republic of Sri Lanka (known as Ceylon before 1972), is an island nation in South Asia, located about 31 kilometers off the Southern coast of India. Due to its location in the path of major sea routes, Sri Lanka is a strategic naval link between West Asia and South East Asia, and has been a center of Buddhist religion and culture from ancient times.

The country is a multi-religious and multi-ethnic nation, where Sinhalese community forms majority of the population, with Tamils, who are concentrated in the North and East of the island, forming the largest ethnic minority. Famous for the production and export of tea, coffee, rubber and coconuts, Sri Lanka boasts a progressive and modern industrial economy and the highest per capita income in South Asia.

According to the Department of Census and Statistics of Sri Lanka, the country's population is recorded at 20,359,439 in 2012, with population density of 325 persons per sq. km. The urban and rural population distribution was 18.2% and 77.4%, respectively.

Sri Lanka is a developing country. After eradication of terrorism in 2009, Sri Lanka is developing rapidly in terms of trade, economy, investment, and tourism. It is ranked 73 on the Human Development Index (2013). Sri Lanka is having progress in each of the HDI indicators. Life expectancy in the country is 75.1 years and literacy is amongst the highest in the region (95.6%).

Please highlight the vision of the Government of Sri Lanka for sustainable national development and the role it envisages Science, Technology and Innovation (ST&I) to play for its development.

For Sri Lanka to improve its economy to bring prosperity to its people and become the "Wonder of Asia", it is imperative to appreciate the fierce competition our goods and services have to face today in the global market. This competition has to be overcome if we are to win the economic war. This demands the infusion of technology and innovation to make our products and services capable of overcoming the competition from goods and services from overseas in the open market.



In order for Sri Lanka to push the economy towards high value activities, enterprises must re-engineer their work processes and invest in new skills and innovations. Towards this, the government proposes to encourage enterprises to:

- undertake Research and Development;
- registration of patents, trade marks and designs;
- automation through technology; and
- training of their workforce.

Sri Lanka made substantial advances over the last few decades, posting solid economic growth as high as 8 percent in 2006, up from 6 percent in 2005.

The Government's development strategy, after eradication of terrorism in 2009, mainly focuses on economic development and investment. It introduced prospective policies designed to improve growth prospects in order to further integrate the island into the global economy.

The challenge for Sri Lanka is now to formulate Knowledge Economy implementation strategies and decide which types of inputs to invest on, in order to make this vision a reality.

Sri Lanka's HDI Trends

Years	Life expectancy at birth (years)	Expenditure on Public education (% of GDP)	Expected years of schooling of children (years)	Mean years of schooling of adults (years)	GNI per capita (constant 2011 PPP\$)	HDI Value
1980	68.2	2.7	10	7.1	2,475	0.569
1990	69.5	2.4	11.3	8.4	3,316	0.62
2000	71.1	-	12.5	10	4,859	0.679
2010	73.8	2	13.6	10.8	7,476	0.736
2013	74.3	2*	13.6*	10.8*	9,250	0.75

Source: UNDP Human Development Report 2013 (Retrieved online, December 23, 2014)

* Note: Data refer to 2012 or the most recent year available

What government body is chiefly responsible for promoting the culture of Science and Technology, and implementing the science, technology and innovation policy in the country?

The Ministry of Technology and Research is responsible for the formulation of policies, programmes and projects with regard to Technology and Research, and for the direction of the implementation of such policies, programmes and projects. The primary focus of the Ministry is to ensure an alignment of the activities of all the institutions under it with national objectives and of strengthening research-industry ties so that industry is benefitted from research findings to add value to its products.

The Ministry has a significant role to play in making Sri Lanka a knowledge hub and in ensuring that the national objective of achieving a knowledge-based economy becomes a reality. The Ministry ensures that the fifteen institutions under its purview align their activities with the policy objectives. All the institutions under the Ministry are also required to formulate and measure performance through the prescribed methodology. A key initiative of the Ministry is the formulation of an Investment Framework for Research and Development.

What are the specific roles of the Ministry of Technology and Research in the Sri Lankan S&T Landscape and which organizations assist it to dispense its functions?

The Ministry of Technology and Research is responsible for developing the Vision for the future and any other overall national policies on behalf of the Government. The Ministry also directs the implementation of policies, programmes and projects within time lines agreed with the national planning authorities and within budgeted resources, with a view to achieving relevant objectives.

Knowledge Economy Index & Knowledge Indexes for Sri Lanka *	
Knowledge Economy Rank	101
Change in KE Rank (from 2000)	-14
Knowledge Economy Index	3.63
Knowledge Index	3.49
Economic Incentive Regime	4.04
Innovation Index	3.06
Education Index	4.61
ICT Index	2.8
Source: <i>Knoema (Data Accessed from World Bank (Aug. 2013))</i>	
* Note: Category ranking on a scale of 0-10	

A key responsibility is the reforming of all systems & procedures to ensure the conduct of business in an efficient manner deploying modern management techniques.

The Ministry also provides other services that come under its purview, including:

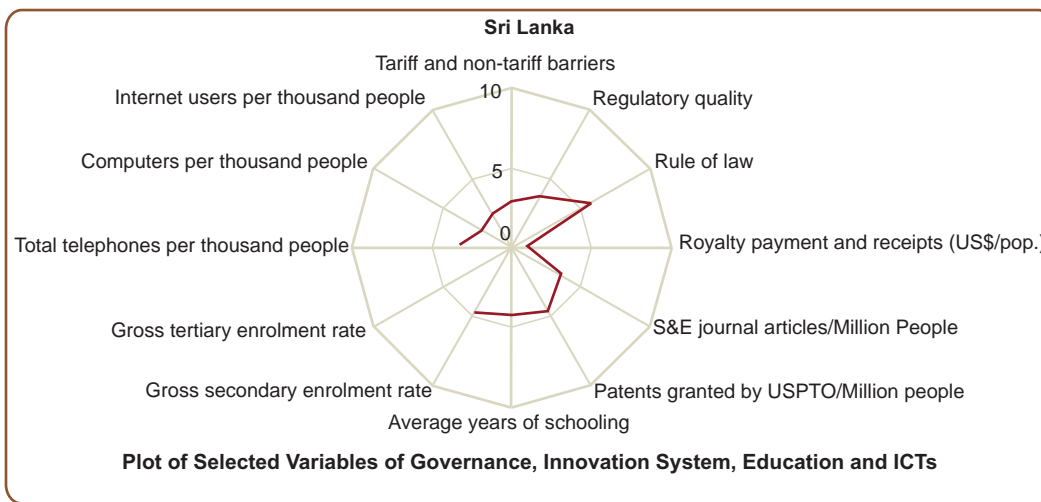
- Scientific and industrial research;
- Establishment & control of standards;
- Socio-economic research;
- Planning and implementation of research activities by providing required facilities to relevant institutions; as well as
- Research in specific areas of basic science and promotion of fundamental studies.

Some of the key Departments, Public Corporations and Statutory Institutions that work under the Ministry include: National Research Council; Institute of Fundamental Studies; National Engineering Research & Development Centre; National Science Foundation; National Science and Technology Commission; as well as, the Industrial Technology Institute (ITI), which is COMSATS' Centre of Excellence in Sri Lanka.

What major achievements have been made in terms of Science and Technology?

The Ministry of Technology and Research in collaboration with the National Science and Technology Commission, formulated the 10 x 10 Investment Framework for R&D for 2015-2020. This initiative was undertaken on the premise that the achievement of ambitious expectations from the Science, Technology and

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ACTIVITIES/NEWS OF COMSATS CENTRES OF EXCELLENCE

CIIT-Pakistan Co-organizes 3rd Vice Chancellors Forum (2015)

The 3rd Vice Chancellors' Forum, bearing the theme 'Universities in the Islamic World: Facing Global Challenges' was held in Islamabad, from February 23-24, 2015. The event was jointly organized by COMSATS Institute of Information Technology (CIIT), Pakistan; Ministry of Science and Technology, Government of Pakistan; Ministry of Federal Education and Professional Trainings, Government of Pakistan; Higher Education Commission (HEC), Pakistan; Islamic Educational, Scientific and Cultural Organization (ISESCO), Morocco; and the Federation of the Universities of the Islamic World, Morocco.

Around 180 heads of universities from Muslim countries participated in the event. The Heads or their representatives from the universities belonged to a number of countries, including Pakistan, Afghanistan, Algeria, Bangladesh, Brunei Darussalam, Cameroon, Egypt, Gambia, Indonesia, Iran, Iraq, Jordan, Kyrgyz Republic, Libya, Malaysia, Niger, Nigeria, Sudan, Tunisia, Turkey, Uganda and Yemen.

The event was inaugurated by the Federal Minister for Planning and Development, Mr. Ahsan Iqbal, who, in his keynote address, encouraged universities to foster an environment of innovation and creativity, besides establishing linkages and collaboration among themselves. The Chairman HEC, Prof. Dr. Mukhtar Ahmed; Rector CIIT, Dr. S. M. Junaid Zaidi; Assistant Secretary General, Organization of Islamic Cooperation (OIC); Ambassador Muhammad Naeem Khan and Deputy Director General ISESCO, H.E. Dr. Amina Obaid Ramadhan Alhajri, also spoke on the occasion.

Multiple panel discussions were held during the course of two-day event touching upon different disciplines covering a wide range of issues and challenges being faced by the universities in the Islamic World. Some key topics covered in these discussions included: Fostering Links with Community, Sustainable Higher Education Systems, Sharing of Knowledge and Fostering Collaboration, Higher Education, Innovation and Entrepreneurship, International Landscape: Role of University Leadership, Higher Education: New Visions for Future, Role of Higher Education in Economic Revitalization, Mapping International Research Collaboration-Future Trends, Equality of Access and Role of Women in Higher Education and in Society, as well as Partnering with Industry. These discussions were steered by veteran academicians from various universities.

Over 70 different Memorandum of Understanding (MoUs) were signed among various International and Pakistani universities, including CIIT. The MoUs are expected to open new avenues of mutual cooperation, and networking among the universities. An exhibition was one of the important features of the Forum, which provided an excellent opportunity to universities/higher education institutions to showcase their respective areas of strength.

Honour for NMC-Nigeria and IROST-Iran: Scientific Board Membership of IBSP-UNESCO

Prof. A.R.T. Solarin, Director National Mathematical Centre (NMC), Nigeria, and Prof. Nasrin Moazami, faculty member of Iranian Research Organization for Science and Technology (IROST), Iran, have been appointed as members of the Scientific Board of the International Basic Sciences Programme (IBSP) of UNESCO. The International



Group Photo of the 3rd Vice Chancellors' Forum (2015, Islamabad)

Scientific Board of IBSP set up by the Director-General of UNESCO recommends projects to be carried out and supported by the Programme. IBSP is an international multidisciplinary programme established by UNESCO Member States in order to reinforce intergovernmental cooperation in science, as well as cooperation between institutions. Promoting North-South and South-South cooperation is at the core of the strategy of the Programme that is being carried in partnership with TWAS, ICSU, CERN and other science centres, IGOs and NGOs.

An astute scholar of Mathematics, Prof. Solarin is also the President African Mathematical Union (AMU). He became a Professor of Mathematics in 1997 and has since trained and mentored many academics all over the world in the mathematical sciences. Prof. Moazzemi, a veteran microbiologist and biotechnologist, holds a Ph.D in Medicine from Laval University, Canada. She is the pioneer of microalgae-based fuels in Iran. The center established by her in 1987 is the regional reference center of biotechnology for West and Central Asia.

BCSIR-Bangladesh Organizes a Seminar

On 20th & 21st February 2015, Bangladesh Council of Scientific and Industrial Research (BCSIR) organized a two-day seminar on “Research & Development activities and Analytical Services of Institute of Food Science and Technology (IFST): Present Situation, Challenges and Future activities”. In the workshop, Dr. Md. Zahurul Haque, Director IFST, presented a keynote paper. Additional Secretary, Ministry of Science and Technology, Government of Bangladesh, Mr. Dilip Kumar Bosak graced the occasion as the Chief Guest. The Chairman BCSIR, Dr. A.K.M. Asaduzzaman, presided over the meeting.



Dr. Md. Zahurul Haque, Director, IFST Giving a Keynote Talk

Some highlights of the event were invited lectures that included:

- i. “Possibility of Establishing a Clinical Research Organization (CRO) in Bangladesh” by Dr. Saleh Hussain, CEO & Chairman of PharmaBio Therapeutic Research, Toronto, Canada; and
- ii. “Present scenario of Bio-refinery in North Carolina State” by Dr. Hasan Jameel, Professor, North Carolina State University, USA.

IROST-Iran signs agreements with IDB and COMSTECH

Iranian Research Organization for Science & Technology (IROST), Iran, and the OIC Standing Committee on Scientific and Technological Cooperation (COMSTECH) signed an MoU on joint scientific and academic cooperation on the sidelines of the first NAM Summit of Ministers of Science and Technology, hosted by the Islamic Republic of Iran, during February 22-24, 2015.

Under this MoU, IROST and COMSTECH have agreed to facilitate technology transfer and commercialization of knowledge-based products among the COMSTECH Member States through holding of annual exhibitions. Both sides have also agreed to jointly prepare projects in partnership with other institutions in OIC Member States, including Islamic Development Bank (IDB) and support the three networks of COMSTECH on nanotechnology, technology-parks and open universities, which are being hosted by the Islamic Republic of Iran. As per the agreement, COMSTECH also agreed to support exchanges of postdoctoral fellows and at least one of the major joint projects proposed by the related OIC institutions and Member States, in order to obtain joint funding from Islamic Development Bank (IDB) and to continue to support events, such as Khwarizmi International Award. On the other hand, IROST pledged to facilitate training of participants from OIC Member States in mutually agreed areas of science and technology.

On January 13, 2015, IROST and the Islamic Development Bank (IDB) signed a protocol for scientific and technological cooperation. The protocol was signed by Dr. Abdolreza Samimi, Vice President for Technology Development of

IROST; Dr. Mahmoud Molanejad, Acting President for International Cooperation of IROST; and IDB delegation members, Mr. Zafar Iqbal and Mr. Saifullah Abid.

NMC-Nigeria to Host UNESCO Chair on Mathematics

An agreement has been signed between UNESCO and National Mathematical Centre, Nigeria, where by the latter has formally been inducted as UNESCO Chair of Mathematics. An application to this effect was earlier

submitted by NMC to UNESCO. As UNESCO chair, NMC would promote an integrated system of research, training, and information and documentation in mathematics, as well as foster high level collaborations between internationally recognized researchers and teaching staff of the Centre and other institutions within Nigeria, as well as elsewhere in Africa, Europe Latin America and the Caribbean. The Chair's activities will be geared towards the promotion of mathematics and science education.

The specific objectives of the Chair, inter-alia include developing critical mass of Algebra experts, who will teach and research at universities in the country, region and other parts of the world; developing effective curriculum for Algebra and provide training to faculties of universities; designing and implementing activities aimed at arousing the interest of youths, especially women in Science, Technology, Engineering and Mathematics (STEM) education; as well as enhancing networking and sharing of knowledge and good practices in the field of focus.

Activities at IRCC, Sudan

During the reporting period, a number of training activities were organized by the Industrial Research and Consultancy Centre (IRCC), Sudan. These trainings were held on topics including: Cleaner production; intellectual property; environmental impact of mining; as well as modern trends in

liquidity; internal audit; cash flow management; and crisis management. The Centre also participated in various events and meeting, including:

- Research and innovation in the framework of the European-Arab cooperation (11-12 February), Egypt;
- Training course on "Design of Science, Technology and Innovation Policies in OIC Member States" (24-26 February), Iran;
- IRCC and UNIDO meeting on Production and utilization of Moringa Oleifera (24 February), Sudan; as well as,
- Meeting of Technical Committee for Science and Technology and Innovation (24-26 February), Kenya.

President TUBITAK MAM, Turkey Visits Technoparks in Singapore

President TUBITAK MAM, Turkey, Dr. Bahadır Tunaboğlu, undertook a visit to Singapore as part of a high-level country delegation, comprising Turkish Minister of Science, Industry and Technology, Mr. Fikri İsik Kocaali; Governor Hasan Basri Güzeloğlu; and Rector of the Gebze Technical University, Prof. Dr. Haluk Gorgun. The objective of the visit was to learn about regional technoparks and to develop bilateral cooperation agreements between Singapore and Turkey. The delegation visited a number of Technoparks in Singapore, including Science Park I, Science Park II, Fusionpolis and Biopolis.

contd. from page 14 ... S&T Indicators of Member State: Sri Lanka

Innovation sector must be preceded by a focused plan that targets national needs.

The 7th Conference on Science and Technology convened by the National Science and Technology Commission (NASTEC) on 7 July 2014, had a participation of 340 delegates, which were researchers, scientists, engineers, academicians as well as private-sector stakeholders, civil society and representatives from Government Ministries and departments. The conference provided a forum for discussion on science and technology in Sri Lanka in relation to the objectives of NASTEC. The Framework identifies ten national priority areas which include: Water; Food, Nutrition and Agriculture; Health; Shelter; Energy; Textile Industry; Environment; Mineral Resources; Information Communication Technology and Knowledge Services; Basic Sciences, and Emerging Technologies and Indigenous Knowledge. While the intervention methods are: Policy Studies; Pure and Applied Research; Innovations; ICTs; Nanotechnology; Biotechnology; Indigenous Knowledge and Intellectual Property Rights; Testing and Standardization; Capacity Building; and Popularization – hence the title 10 x 10 Investment Framework for R&D.

According to a World Bank Report, a knowledge economy is one that creates, disseminates and uses knowledge to enhance its growth and development process. The application of knowledge is manifested in all areas such as entrepreneurship, innovation, R&D and people's education and skill levels is now recognized one of the key sources of growth and competitiveness in the global economy. Countries like Sri Lanka, which are poised to realize faster growth and move into middle income status need to formulate robust national Knowledge Economy (KE) strategies and reform the appropriate sectors in order to benefit from the driver of growth. The time is right for Sri Lanka to begin its transition towards becoming a knowledge based economy. In light of Sri Lanka's recent and continuing reforms and its ambitions to realise faster growth, it is important for Sri Lanka's leaders and interested stake-holders to evaluate where the country currently stands on its journey towards becoming a knowledge economy and how best it can benefit from the KE potential like other advanced countries. Increased investments are required in Sri Lanka's knowledge inputs in order to spur innovation and drive Sri Lanka towards fast growth.

SCIENCE, TECHNOLOGY AND DEVELOPMENT

New Developments in Bacteriophage Therapy

Drug-resistant infections kill more than 50,000 people across Europe and the United States annually, numbers are even more alarming in other parts of the world (*Science Daily*, February 18, 2015). Since their discovery, antibiotics have saved numerous lives, however over decades bacteria has evolved to resist the effect of many of these. A promising new approach to traditional antibiotics is bacteriophage therapy, banking on the ability of bacteriophages to infect bacteria. Phages have evolved as natural hosts of bacteria, and can be used effectively as natural "bacterial killers."

Researchers from the Hebrew University of Jerusalem's Faculty of Dental Medicine isolated an anti-*Enterococcus faecalis* phage from sewage effluents retrieved from a Jerusalem sewage treatment facility. *E. faecalis* causes diseases ranging from endocarditis (a fatal heart infection) to bacteremia (over run of bacteria in the blood). The bacteriophage, named EFDG1, is capable of infecting the V583 strain of *E. faecalis*, which is resistant to vancomycin, the most effective anti-*E. faecalis* antibiotic. EFDG1 almost entirely eradicated the bacterial cultures both in liquid culture and biofilm form. The phage was highly efficient against *E. faecalis* and *E. faecium* regardless of their antibiotic resistance profile. Genome sequencing showed that EFDG1 belongs to the Spounavirinae sub-family of the Myoviridae phages, which include other promising candidates for therapy against Gram positive pathogens that cause infections in humans. The phages genome apparent does not contain harmful genes and can be brought safely in medical use.

3D Printed Guides to Help Treat Damaged Nerves

A team of scientists at the Faculty of Engineering, University of Sheffield, UK, have succeeded in using a 3D printed guide to help nerves damaged in traumatic incidents repair themselves (*Science Daily*, February 23, 2015). The research, published in the journal *Biomaterials*, was funded by the Engineering and Physical Sciences Research Council and the Medical Research Council of UK. The team used the device to repair nerve damage in animal models and has shown potential to help treat many types of traumatic nerve injuries. The device, called a nerve guidance conduit (NGC), is a framework of tiny tubes that help damaged nerve endings connect with each other naturally.

The technique uses Computer Aided Design (CAD) to virtually construct the devices, which are then fabricated using laser direct writing, a form of 3D printing. These devices can be adapted for any type of nerve damage or even tailored to an individual patient.

On-farm System Turns Rice Plants into Biofuel and Fodder

According to a recent *SciDev.Net* report (February 9, 2015), an on-site technology has been developed to simultaneously create biofuel and animal feed. Developed by Japanese researchers, the technology uses a solid-state fermentation (SSF) system with rice plants (grown to feed livestock) wrapped along with yeast, enzymes and bacteria into a bale covered with a plastic film. The resulting ethanol after fermentation can then be used as bio-fuel, while the silage produced can be used as feed for livestock. The research was first published in the journal *Biotechnology for Biofuels*.

This breakthrough will cut transportation costs associated with off-site biofuel manufacture and effectively counter criticism on biofuels in depleting and inducing higher prices for essential food stocks, such as rice.

Graphene as Novel Anti-cancer Therapeutic Strategy

A new development opens up the possibility of preventing or treating a broad range of cancers, using a non-toxic material (*Science Daily*, February 25, 2015). Published in a journal, *Oncotarget*, the research shows that graphene oxide acts as an anti-cancer agent that selectively targets cancer stem cells (CSCs). A variety of graphene oxide formulations were used for testing against six different cancer types: breast, pancreatic, lung, brain, ovarian and prostate. The graphene oxide was seen to be effective across most of these by blocking processes which take place at the surface of the cancer cells. Used in combination with conventional cancer treatments, this technique can help deliver a better overall clinical outcome for cancer treatment.

Defeating Dengue the Smart Way

A dengue surveillance model using spatial technology has been designed by the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) has been launched for use in the Sindh province of Pakistan as prediction system based on surveillance data gathered in real time using a smartphone app and fed into a spatial or geographical model (*SciDev.Net*, February 23, 2015). The system is already under use in the Punjab province, where android phones loaded with an early warning app were distributed to workers and government officials to record the location and timing of confirmed dengue cases, and larvae-infested stagnant water in pools or containers. The disease has been causing havoc in Pakistan during the recent years. Each year, more than 100 million people worldwide are infected with dengue and over 2.5 billion people are at risk from the disease.

PROFILE OF HEAD OF COMSATS' S&T CENTRE OF EXCELLENCE

DR. MAHER SULEIMAN, DIRECTOR – HIAST, SYRIA

Dr. Maher Suleiman is the Director of the Higher Institute for Applied Sciences and Technology (HIAST) which is an educational institution founded in 1983 at Damascus, Syria.

Dr. Suleiman did his undergraduate studies at HIAST and received an Engineering Diploma in Informatics in 1991. He then proceeded to France where he pursued his postgraduate studies at the University of Montpellier-II. There, he received an advanced master degree (DEA), followed by a Ph.D. in Distributed Systems in 1998. He returned to Syria in the same year and started his academic career as a lecturer and researcher at HIAST. During his affiliation with HIAST, he has served the Institute in different scientific and academic positions, including: Chief of System and Computer Networks laboratory (2005); Vice Director for Scientific and Research Affairs (2008), and Head of Informatics Department (2009). Between 2010 and 2013, he was appointed as the Director General of National Agency for Network Services (NANS), which is a governmental agency under Ministry of Communication and Technology, mandated to making regulations, managing and operating the Syrian digital signature infrastructure (a public key infrastructure: PKI); the national Internet Top-Level Domains (TLDs); Computer Emergency Response Team Centre (CERT); and all other Internet related services. Having finished his 3-year



term at NANS, he returned to HIAST as its Director (2014).

As an academician, Dr. Suleiman's work has been focused on subjects related to operating systems (OS) and networking. He has been a lecturer for undergraduate and postgraduate programmes at three institutions of Syria: HIAST; Damascus University; and Syrian Virtual University (SVU). He has also supervised theses of many Master level students and a Ph.D student. Working with SVU on part-time basis, he launched an engineering programme in informatics (ISE: Information System Engineering) in 2005 and was appointed as the Director of this programme for 8 years. Subsequently, he was appointed as the academic supervisor and Programme Director for the Doctorate programme at SVU.

As a network expert, Dr. Suleiman has performed many studies in the area of designing network infrastructures and data centres for enterprises and Internet service providers. These tasks were mainly performed for the benefit of governmental institutions. He has also provided many consultancies to the international organization, such as United Nations Development Programme (UNDP).

Dr. Suleiman has been actively involved in many important national and international programmes in various capacities, such as: Team Leader for HIAST for the SHERN Project (Syrian Higher Education Research Network); National Project Coordinator of EUMEDCONNECT project, which aims to connect the Mediterranean research networks with the European research networks; National Project Coordinator of EUMEDGRID project that is an EU Funded Project aiming to establish a pilot Grid infrastructure in the Mediterranean region supporting proof-of-concept (POC) for regional applications; National Team Leader of LINKSCEEM project, which aims at the establishment of a high performance computing eco-system in the Eastern Mediterranean region by integrating and coordinating regional computational resources.

Dr. Suleiman has been a part of different national committees and boards, including: Syrian Telecom Regulatory Authority Task Force; Board of Directors of Syrian e-payment company; and Board of Directors of Syrian Post. He was also a Member Editorial Board of the International Journal of Informatics Researches, published by the Syrian Computer Society (SCS-IJIR).

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HIAST IN BRIEF

The Higher Institute for Applied Sciences and Technology (HIAST), Damascus, Syria, was established in 1983. The Institute aims to develop human resource that is appropriately equipped to conduct scientific and technological research in all fields of applied science and technology so that it can actively contribute in the scientific and economic progress of Syria. HIAST offers specialized education, e.g. License in Engineering, Diploma, as well as Masters and Doctorate degrees, to prepare a specialized cadre of human resource in the field of engineering. HIAST provides top-notch education to undergraduate and postgraduate engineering students in different disciplines, including Informatics, Electronic Systems, Communications, Mechatronics and Materials Science. The training and educational services provided by HIAST are need-oriented and planned to serve various sections of academia and industry of Syria. The Institute coordinates and conducts its services in collaboration with several public and private-sector organizations of Syria. HIAST being a 'learning organization' has a broad focus and executes joint projects at regional and international levels to enable technology transfer and experience sharing.

HIAST has been affiliated with COMSATS as its Centre of Excellence since 1994.

COMSATS BRIEF AND ANNOUNCEMENTS

Selected Forthcoming Scientific Events in COMSATS' Countries

25 - 26 April 2015	International Conference on Advanced Materials and Engineering Structural Technology (ICAMEST 2015), Qingdao, China (www.lanyrd.com/2015/international-conference-on-advanced-materials-a-3/)
25-27 May 2015	International Conference on the Agriculture and Environment for Sustainable Development, Cairo, Egypt (http://10times.com/icaesd)
1-3 June 2015	Green Behavior: Re-Thinking Policy For Sustainability, Istanbul, Turkey (www.worldsustainable.org/index.php/wasd-2015)

18th Coordinating Council Meeting 12-13 May 2015, Colombo, Sri Lanka

COMSATS is pleased to announce the convening of its 18th Coordinating Council meeting in Colombo, Sri Lanka, from 12th to 13th May 2015. The meeting is being hosted by the COMSATS' Centre of Excellence in Sri Lanka, the Industrial Technology Institute (ITI). The Members of the Council will meet in order to review the present activities of the Network, as well as to deliberate on its future course of action.

On behalf of COMSATS and ITI, Sri Lanka, I take this opportunity to invite the Members of Council to join us in Colombo. We look forward to the active participation and valuable contributions from the Members and the Observers of the meeting.

Advisor (Programmes), COMSATS Secretariat (husseint@comsats.net.pk)

Announcement of Research Grants

TWAS Research Grants Programme in Basic Sciences Deadline: 1 June 2015

Established in response to the needs of researchers in developing countries, TWAS Research Grants Programme in Basic Sciences awards grants for research projects in biology, chemistry, mathematics and physics to individual young researchers or groups in research units in the 81 science-and-technology-lagging countries (S&TLC) identified by TWAS. For details, please visit: <http://twas.org/opportunities/research-grants>.

Call for Papers

COMSATS invites scholarly contribution for Volume 21(1) of its bi-annual journal Science Vision, which aims at highlighting the important scientific and technological developments that have a bearing on socio-economic conditions of the people.

For more information, visit the journal's website: www.sciencevision.org.pk.

Last date for submission of papers/articles: April 30th 2015.



A BRIEF ON COMSATS

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) is an intergovernmental organization, with its Secretariat located in Islamabad.

COMSATS, currently, has 21 countries as its members, spread across three continents, i.e., Latin America, Africa and Asia. A network, of 19 International Science and Technology Centres of Excellence, is also affiliated with COMSATS to contribute to scientific development of its Member States. The mission of COMSATS is to help create a world where all nations are at peace with one another and capable of providing good quality of life to their populations in a sustainable way using modern S&T resources. For detailed information, please visit COMSATS' website: www.comsats.org.

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