



Executive Director COMSATS and Other Officials of COMSATS with H. E. Mr. Dostain Khan Domki, Minister of State and Ms. Yasmin Masood, Secretary for Ministry of Science and Technology, Government of Pakistan

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From the Executive Director's Desk

The Nobel Foundation announced earlier this October the brains the organization found most able in the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace, as well as in a new category for this year, Economic Sciences. Since early 20th century, the Prize has come to be known as an ultimate recognition of excellence in the fields in which the award is given. A look at the recipients of the Prize since its inception, given in the scientific fields, shows that excellence in these fields has remained concentrated in the North. This is not a matter of surprise as the developed nations learnt long ago the value of gaining, retaining and applying knowledge in various fields, including S&T. Such realizations led them to exploring new avenues and expand their economic horizons and technological frontiers.

Now, the world on one hand tells a story of advances and scientific breakthroughs of unprecedented magnitude and frequency, thanks to the wonders of technology that itself is constantly evolving. On the other hand, the disparity in distribution of benefits of such wonders of S&T also seems to be increasing. There is no doubt that many of the benefits that transpire from R&D in

science do diffuse to the larger parts of the world, but it is not enough given the potential of indigenous efforts of the same scale.

Such observations make the triangular cooperation, i.e., South-South-North, not only necessary but indispensable. COMSATS is conscious of such crucial needs of the development process of the South. Committed to its original mandate of S&T-led socio-economic development of member states, COMSATS is reaching to seasoned organizations and individuals to bring in the much needed intellectual value to its organizational pursuits.

COMSATS' own pool of such able minds includes the new members of its Technical Advisory Committee approved as an outcome of this year's Coordinating Council. The Committee that is set to meet mid-November 2017, in Italy, is now composed of experts from Kuwait, United Kingdom, Malaysia, Tunisia, China, Sudan, Russia, Nigeria, and Jordan. The much sought after deliberations of this committee are expected to provide important

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NEWS/ACTIVITIES/HIGHLIGHTS FROM COMSATS SECRETARIAT

Minister of Science and Technology, Government of Pakistan, Visits COMSATS Secretariat

On 3rd October 2017, H. E. Mr. Dostain Khan Domki, the Honorable Minister of State for Science and Technology and Mrs. Yasmin Masood, Secretary for Ministry of Science and Technology, visited COMSATS Headquarters on invitation from the Executive Director COMSATS, Dr. S. M. Junaid Zaidi. The meeting held with these senior officials of COMSATS' Focal Ministry in Pakistan was also attended by other officials of COMSATS.

Dr. Zaidi introduced his team to the honorable State Minister as a bunch of workers who have laid a good foundation for the organization. Delineating upon COMSATS, its organizational structure, operations, and activities, Dr. Zaidi called it a true realization of the idea of Dr. Abdus Salam. COMSATS, he informed, was founded in a meeting with 18 Prime Ministers from different countries, who signed the international agreement at the organization's foundation meeting in October 1994. The Government of Pakistan agreed to provide funding for the Secretariat, which is permanently hosted in Islamabad Pakistan. The subsequent support from the Pakistani government continues till date. The organization now stands 25 Member States strong



Minister of Science and Technology, Pakistan, and Secretary MoST, receiving a briefing from Executive Director COMSATS

and has a Network of 21 institutions from developing world affiliated with it. It was noted that Turkey is the most recent country to join COMSATS as a Member State. It was further informed that the organization is aggressively approaching governments and ambassadors of different countries for further enhancement of membership. Dr. Zaidi sought the Ministry's support for COMSATS' future endeavours and those already underway.

The officials of MoST were very receptive of the presentation given by Dr. Zaidi and made some pertinent queries with regard to various aspects of the organization. Ms. Yasmin highlighted the need for enhancing the international character of the organization to better achieve its objectives. In this regard, she suggested devising necessary policies comparable to those of other organizations of similar mandate, such as UNESCO or ISESCO.

Meeting with Permanent Secretary, Ministry of Higher Education, Research, Science and Technology, Gambia

A delegation from Gambia, headed by Mr. Yaya Sireh Jallow, Permanent Secretary, Ministry of Higher Education, Research, Science & Technology (MHERST) visited COMSATS Secretariat on 14th September 2017. Mr. Jallow was also accompanied by Prof. Faqir Muhammad Anjum, Vice Chancellor, University of the Gambia (UTG); Prof. Ousman Nayan, Deputy Vice Chancellor and Provost, School of Medicine and Applied Health Sciences, UTG; and Mr. Samba Sowe, Sr. Science, Technology and Innovation Officer at MHERST.

Briefing the worthy guests, Dr. Zaidi appreciated the active role that the Gambia is playing in COMSATS' activities.



Permanent Secretary, MHERST, Gambia, receiving a shield from Executive Director COMSATS on his visit to the Secretariat

He informed the delegates about the organization's strength with respect to Member Countries and Centres of Excellence, as well as its various present and past projects benefitting the Member States. He encouraged the Gambia, relatively newer Member State, to benefit from COMSATS' programmes to the fullest through participation and Annual Membership Contributions.

The Vice Chancellor UTG appreciated the efforts and support of COMSATS since Gambia joined the organization. The Vice Chancellor suggested that the platform of COMSATS can be used for improvement of education and human resource development in the Gambia through capacity building and scholarships.

The Permanent Secretary thanked the Executive Director for invitation to COMSATS Secretariat. He noted that the support of COMSATS is required for the development of Centres of Excellence in the Gambia.

Meetings with Foreign Diplomats from Tunisia, Cuba, Somalia, Kenya, and Afghanistan

During September-October 2017 representatives from foreign missions belonging to Tunisia, Somalia, Cuba, Kenya, and Afghanistan visited COMSATS Secretariat in Islamabad. The officials, inter alia, were informed about the scope, international projects and mandate of organization. They were also told about the benefits and obligations of joining COMSATS as member state. Some specific points discussed during the meetings are given below.

Ambassador of Tunisia, H. E. Mr. Adel Elarabi, and Ambassador of Somalia, H. E. Mrs. Khadija Mohamed Almakhzoumi (2nd October 2017)

The Ambassador of Tunisia appreciated Dr. Zaidi's efforts towards achieving COMSATS' objectives. He assured Dr. Zaidi of full support from Tunisia for induction of more Member States to COMSATS. The Ambassador urged the Executive Director to facilitate Tunisian students in winning graduate and post-graduate scholarships in African and European institutions. Further, he solicited support of COMSATS for strengthening scientific research in Tunisia and showed willingness for helping in execution of research projects/establishment of a Centre of Excellence in Africa or Europe.

The Ambassador informed that Tunisia places special



Ambassador of Tunisia and Somalia in a meeting with COMSATS' Officials

emphasis on education, health and women empowerment. He apprised that human resource development, S&T, environment and research are the strengths of Tunisia. While responding to a query, the Ambassador apprised that 40% of the judges in Tunisia are women and, after 2011, it has been made obligatory for every party in Tunisia to have 1:1 gender ratio. The Ambassador proposed that a meeting should be held between Dr. Zaidi and the Minister of Higher Education and Scientific Research, Tunisia, in order to discuss matters of mutual interest.

The Tunisian Ambassador also encouraged the Somali Ambassador to avail the opportunity and join COMSATS. The Ambassador of Somalia was handed a formal letter of invitation to the government of the Federal Republic of Somalia to join COMSATS.

Ambassador of Cuba in Islamabad, H. E. Gabriel Tiel Capote (22nd September 2017)

The honourable Ambassador thanked the Executive Director COMSATS for his hospitality, and expressed pleasure to have learnt about the ongoing activities of COMSATS. He considered COMSATS an important platform for the promotion of South-South cooperation for achieving S&T led socio-economic progress in developing countries. He

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feedback on the organization's activities and past pursuits, as well as direction and guidelines on what is to be achieved in the coming years. The generous support and hospitality of The World Academy of Sciences (TWAS) has been made available to use once again for hosting this meeting, for which I sincerely thank my counterpart at the Academy, Prof. Romain Murenzi, and his team.

As usual, pages of this issue include the activities of COMSATS' officials and collaborative efforts that involve the foreign missions of member and non-member countries deputed in the host country, Pakistan, and COMSATS' capacity building activities. The distinguished visitors that honoured COMSATS Secretariat during this period included the honorable State Minister of COMSATS Focal Ministry in Pakistan, H.E. Mr. Dostain Khan Domki. Pleased to have their support, COMSATS thanks the honorable visitors.



ED COMSATS giving a presentation to Ambassador of Cuba

thanked COMSATS for the offer of membership to Cuba, and pledged to follow-up the matter with the Cuban government in due course of time. He informed the participants about the recent initiatives taken by the Cuban government for strengthening S&T sector in the country.

High Commissioner of Kenya, H. E. Prof. Julius K. Bitok (27th September 2017)

His Excellency was accompanied by Abdikadir Doyo Wario, Second Counselor at the Kenyan High Commission. The meeting was also attended by Ms. Tehmina Doultana, Member National Assembly, Pakistan and senior officials of COMSATS.

The High Commissioner called Kenya an engine of east and central Africa and showed interest in having it as a part of the Commission. He pledged to take up the matter with concerned departments in Nairobi for further consultation. The High Commissioner pledged his support for South-South cooperation.



High Commissioner of Kenya with COMSATS' Officials

His Excellency noted COMSATS' potential for sharing knowledge and helping Kenya overcome the challenges in achieving science and technology excellence. Dr. Zaidi showed his intent to send a letter to the Kenyan Ministry of Science and Technology with regard to accession of Kenya as COMSATS' Member State.

Deputy Head of Mission of Afghanistan, H. E. Mr. Zardasht Shams (31st October 2017)

His Excellency was accompanied by Mr. Daud Mohseni (First Secretary), and Mr. Hamayun Ali (Education Attaché). The Ambassador thanked Dr. Zaidi for his invitation and appreciated the efforts made by COMSATS to enhance South-South collaboration. He explained the transition period of development that Afghanistan is undergoing and hoped that the country continues to grow in future. He was willing to know which ministry would help in correspondence and collaboration between Afghanistan and COMSATS. Dr. Zaidi informed the Ambassador that the Ministry of Foreign Affairs may be appointed as a focal point of correspondence and collaboration between Afghanistan and COMSATS. His Excellency was keen to share all the information with relevant officials of Afghanistan to open new doors of collaboration between the two.



H.E. Mr. Zardasht Shams, Deputy Head of Mission of Afghanistan, on his visit to COMSATS Secretariat

Capacity-Building Events in Kazakhstan and Gambia

10th ISESCO-COMSATS' National Workshop on 'Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries', Almaty, Kazakhstan (02-06 October 2017)

The workshop was jointly organized by COMSATS, ISESCO, KazNU, Kazakhstan, under ISESCO-COMSATS



Participants of the Workshop on Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries, Almaty, Kazakhstan

biennium Cooperation Programme for 2016-2017. The event was hosted by Al Farabi Kazakh National University (KazNU), Republic of Kazakhstan, a COMSATS' Centre of Excellence in Kazakhstan.

The aim of the series of workshops is to build indigenous capacity of the local scientists and institutions in the developing countries and promoting self-reliance for upkeep of scientific equipment being used in research Labs. More than 60 participants including senior scientists, engineers and technicians from various research institutions and universities of Almaty, and other cities of Kazakhstan, benefited from the training provided by the COMSATS' international experts.

Mr. Tajammul Hussain, Advisor (Programmes), COMSATS. The ceremony was attended by a number of senior officials of KazNU, Ministry of Education and Science, Kazakhstan, and other organizations.

The ten technical sessions of the workshop comprised of lectures and hands-on training and troubleshooting and repairing of the scientific equipment in the different labs of KazNU. First half of the day was reserved for lectures/theoretical part of the workshop while in second half of the day, hands-on training and practical demonstrations were conducted to consolidate the learning.

A number of lab instruments repaired during the workshop.



A technical session of the Kazakhstan workshop underway



The participants of the workshop getting hands on training

The event was inaugurated on October 02, 2017 by Prof. Dr. Tlekkabul Ramazanov, Vice-Rector for Research & Innovations, Al Farabi Kazakh National University (KazNU), Kazakhstan. The inaugural ceremony was co-chaired by

These included: Spectrophotometer Lambda 35, PerkinElmer, Auto Distillation Unit (ADU-4), Laboratory Reactor LR-2/ST (Germany) UNIZIK, FTIR Systems CM1201, Liquid Chromatograph, FTIR Systems FSM,



Distinguished Guests and Speakers at the Inaugural Session of International Congress on Viruses and Vaccines in Tropical Areas

Spectrophotometer Shimadzu UV 3600, Highly effective liquid chromatography (HELIC) SYCAM, Alloy analyzer (spectrometer) Agilent 725, ICP-MS Agilent 7500 USA, IR-Spectrometer Nicolet IR200, Mass Spectrometer/Chromatech-crystal 5000 and Auto Distillation Unit.

The ceremony concluded with the distribution of certificates by the Prof. Dr. Ramazanov and Mr. Hussain among the experts, participants, and the Organizing Committee members.

International Congress on ‘Viruses and Vaccines in Tropical Areas’, Sere Kunda, Gambia (11-12 October 2017)

COMSATS, in collaboration with The University of the Gambia (UTG) and Islamic Educational, Scientific and Cultural Organization (ISESCO), successfully organized the first International Congress on Viruses and Vaccines in Tropical Areas. The congress managed to attract more than 100 participants consisting of scientists, experts on infectious diseases, academicians, public health professionals and postgraduate students from several countries around the world involved in treatment, research, discovery and development of drugs and vaccines in the field of emerging viruses.

The two-day international congress brought together experts from the academia, healthcare professionals, government and the public health experts to discuss ideas, share knowledge and learn about the latest research that may benefit the public at large. The international congress brought together experts from countries, such as Bangladesh, Sri Lanka, Ghana, Nigeria, Pakistan, and Sudan.

Some interesting research papers presented at the congress were: ‘Ebola Virus Disease – Strides Towards Control’ by Dr. L. E. S. Jaiteh, Edward Francis Small Teaching Hospital, Gambia; ‘Zika Virus: A Communicable Disease Threat’ by Dr. Joel Solorzano Romero, School of Medicine and Allied Health Sciences, University of The Gambia; ‘The Gambia Hepatitis Intervention Study: Vaccination as a Means of Cancer Control’ by Dr. S.O Bittaye, International Agency for Research on Cancer (WHO-IARC); ‘Prevention of Cervical Cancer by HPV Vaccination: The Gambia Experience’ by Dr. D. Sowe, Ministry of Health & Social Welfare, The Gambia; ‘Mechanism of a Semi-conserved In-Vitro Selected Nueraminidase Inhibitor Resistant Variant in H10N8 Influenza A Virus’ by Dr. Oladejo, Federal University of Technology, Nigeria.

The recommendations that transpired from the speakers’ deliberations and Panel discussions include:

- A global governance and coordination mechanism for



The Vice President of the Gambia Delivering Inaugural Address

viral infections in tropical areas based on the WHO framework such as the Global Research Collaboration for Infectious Disease Preparedness should be established.

- Preparedness needs to be strengthened, through specific manuals and training protocols for clinicians, epidemiologists, microbiologists, and veterinarians for pandemic viral diseases.
- Real-time active surveillance response systems, research priorities and innovative mechanisms for managing clinical cases of Viral Hemorrhagic Fevers and other aetiological agents with outbreak potential is vital. Best practices such as training and exercising of appropriate teams and individuals, and their implementation need to be developed during non-outbreak periods.
- It is imperative to understand the public's risk perceptions, knowledge and behaviours during a health crisis and the differences across segments of the population and countries. Qualitative data, polls and surveys are essential tools for achieving this understanding.
- The data collection methods, the models and the results should be shared between developing countries as a source of information and exchange of good practices.



Participants of the Congress during Technical Session

Avenues of Cooperation with North Explored

In line with COMSATS' mandate to expand the scope of its programmes and international partnerships, the organization has been exploring avenues of cooperation with some institutions from the North. Ambassador (R) Mr. Shahid Kamal representing COMSATS held meetings with Mr. Jorge Chediek, Special Envoy of UN Secretary General and Director of UN Office for South-South Cooperation, and Mr. Navid Hanif, Director at UN Office for Economic & Social Council (ECOSOC) Support and Coordination on

17th October 2017.

During these meetings, ideas for collaboration and assistance for COMSATS' projects were explored. Mr. Chediek welcomed the proposals from COMSATS for cooperative activities, exchanges and linkages. They assured that the UN Office for South-South Cooperation would extend cooperation and support to COMSATS.

Mr. Hanif Support and Coordination was glad to learn of the existence of COMSATS and its work on promoting STI collaboration in the South. He agreed to support COMSATS' initiatives and also help in building the image of COMSATS at the international level through the platform of ECOSOC.

Second Meeting of COMSATS Technical Advisory Committee to be held in Italy

Preparations continue at COMSATS Secretariat for the 2nd meeting of Technical Advisory Committee to be held in Trieste, Italy, on 15th November 2017. The meeting will be hosted by The World Academy of Sciences (TWAS). The Executive Director COMSATS has extended invitations to all the members of TAC, Heads of Centres of Excellence and International partner organizations of COMSATS. Officials from ICTP-Italy and ICGEB-Italy are also expected to attend the meeting.

COMSATS Secretariat is coordinating with the host of the event to ensure proper and timely arrangements. The agenda to be discussed pertains to Functions of TAC, Enhancing South-South Cooperation, and Challenges in Achieving Sustainable Development Goals.

Meeting with the President of International Islamic University, Islamabad, Pakistan

On 21st September 2017, the President of Islamic International University, Islamabad (IIUI), Dr. Ahmed Yousif Ahmed Al Draiwesh, visited COMSATS Secretariat.

Dr. Zaidi introduced COMSATS to Dr. Draiwesh as an intergovernmental organization (IGO) with a membership of 25 countries. Dr. Zaidi sought his cooperation in expanding COMSATS' membership to more states in the Middle East and scientific institutions therein.

Referring to his old working relations with Dr. Zaidi, Dr. Draiwesh thanked him for the briefing and lauded the leadership role he is playing for COMSATS. He noted that COMSATS' flagship project, CIIT, has helped IIUI in Campus Management System by providing the technical

expertise. He hoped to have cooperation between IIUI and COMSATS in the field of Quality Enhancement/Assurance in Education.

Farewell Reception in Honor of H.E. Mr. Nedim Makarevic, Ambassador of Bosnia and Herzegovina

On 27th September 2017, COMSATS and Institute of Peace and Diplomatic Studies organized Farewell reception in Honor of H.E. Dr. Nedim Makarevic, the outgoing Ambassador of Bosnia and Herzegovina to Pakistan. During the reception, a number of Ambassadors and representatives from the diplomat corps of Islamabad were present to grace the occasion to bid farewell to their colleague. Apart from the Bosnian Ambassador, Ambassadors/high Commissioners from Bosnia & Herzegovina, State of Palestine, Sri Lanka, Uzbekistan, Tajikistan, Azerbaijan, Kyrgyz Republic, Ukraine, Nigeria, Algeria, Somalia, Sudan, Syria, Cuba, Tunisia, Diplomats from Kazakhstan, Yemen, were present on the occasion.

Speaking on the occasion Dr. Junaid Zaidi, Executive Director COMSATS, highlighted the objectives and mission of COMSATS. He considered the outgoing Bosnian Ambassador a Friend and upon his departure an Ambassador of COMSATS in his country. He has also shared the vision of increasing the membership of COMSATS so that South-South cooperation in science and technology could be enhanced.

Speaking on the occasion, H.E. Dr. Nedim Makarevic considered Pakistan one of the most wonderful countries of the world. He noted that during his stay in Pakistan, he had tried to strengthen relations at the top most level between the two countries. He was of the view that Education is the

key to solving all major challenges in Pakistan.

COMSATS' Officials Explore Avenues of Cooperation with Institutions in Malaysia and Thailand

A delegation comprising of Prof. Dr. Qaisar Abbas, Director, CIIT-Lahore; Dr. Abdus Sattar Abbasi, Head, Centre of Islamic Finance, CIIT-Lahore; and Mr. Shahzad Ahmed, Manager (International Relations), CIIT, Islamabad, visited Malaysia and Thailand from 3rd to 11th October, 2017.

The purpose of the visit included follow-up of the matter accession of Malaysia and Thailand to COMSATS as member states; attending Kuala Lumpur Islamic Finance Forum (KLIFF-2017); meetings at International Centre for Education in Islamic Finance (INCEIF), International Islamic University Malaysia, University Putra Malaysia, High Commission of Pakistan in Malaysia, and Ministry of Science Technology and Innovation in Malaysia; participation in Disaster Resilience Week at United Nations Economic and Social Commission for Asia Pacific (UNESCAP), Bangkok; and meeting at Ministry of Science and Technology, Bangkok, Thailand.

During the visit to various academic institutions in Malaysia the delegates met officials to discuss and explore opportunities for cementing collaborative ties in areas of mutual interest.

The meetings with H.E. Syed Hassan Raza, High Commissioner, Pakistan to Malaysia; and Deputy Secretary General, Ministry of Science, Technology and Innovation, Prof. Madya Dr. Ramzah Dambul, were conducted to make efforts for accession of Malaysia as member state of COMSATS. A proposal for the membership of Malaysia to COMSATS in the name of honorable Minister of Science Technology and Innovation, Malaysia, along with other relevant documents, was presented during the meeting.

Meeting with Executive Secretary and heads of ICT and disaster management at UNESCAP, Thailand, various participants of the event, Ambassador of Pakistan to Thailand was also arranged to seek collaboration and support for activities of mutual interest.

For inclusion of Thailand as member state of COMSATS, a formal proposal of COMSATS' membership to Thailand was presented during meeting with Director (Office of International Cooperation), Ministry of Science and Technology, Bangkok.



Executive Director COMSATS presenting a shield to the outgoing Ambassador of Bosnia and Herzegovina

SPECIAL SECTION: COMSATS' FORUM ON 2030 SUSTAINABLE DEVELOPMENT AGENDA

The concept of South-South Cooperation (SSC) is based on the recognition of the ability of developing countries and regions to jointly redeem themselves of their low socio-economic standings and developmental challenges. It provides an impetus of solidarity and collaboration among the countries of the South that could contribute to their national well-being and the attainment of internationally agreed development goals, including the 2030 Agenda for Sustainable Development.

The United Nations Day for South-South Cooperation celebrates the economic, social and political developments made in recent years by regions and countries in the south by using the mechanism of South-South Cooperation and highlights various aspects of technical cooperation among developing countries. In this perspective, a forum themed '2030 Agenda for Sustainable Development', was organized by the Commission on Science and Technology for Sustainable Development in the South (COMSATS) with support from the Institute of Peace and Diplomatic Studies (IPD), in Islamabad on 12th September 2017.

The forum panelists belonged to Foreign missions of China, and Palestine, European Union, UNIDO, and UNDP and

CIIT, Pakistan. They endorsed the importance of South-South Cooperation for exchange of resources, technology, as well as knowledge between the developing countries of the Global South.

The event had a strong attendance of over 110 from foreign missions in Islamabad, academia, R&D institutions and government representatives of Pakistan, as well as think tanks and international organizations and media. The representatives of foreign missions in Islamabad attending the forum belonged to Iran, Malaysia, Tunisia, Oman, Sudan, Kazakhstan, Turkey, China, Kenya, Uzbekistan, Tajikistan, Kyrgyz Republic, and Russia.



A Glance at the participants of the Event



Executive Director COMSATS sharing his views at the Forum

In his welcome address, the Executive Director COMSATS, Dr. S. M. Junaid Zaidi, introduced COMSATS as the highest level forum of the South for cooperation in Science and Technology, with Heads of States comprising its Commission. Dr. Zaidi informed that, taking its efforts of South-South cooperation forward, COMSATS is trying to establish new Centres of Excellence in member countries, as well as working to expand the Network's horizons to the North. He advocated the need for utilizing the North's experience for upgrading the institutions in the South.



Speakers of the Forum on "2030 Agenda for Sustainable Development"

More and more collaboration is sought from the institutions and organizations in the North to increase the efficacy of the organization's efforts for South-South cooperation in S&T for sustainable development.

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

The insights into China's development process shared by Mr. Zhao Lijian, Deputy Head of Mission, Embassy of People's Republic of China to Pakistan, provided some important ideas and precedence useful for other member countries of COMSATS. He noted that China is on the mission to eradicate poverty. He attributed the country's development to the efforts made in this regard. China, he noted, has eradicated poverty at a fast pace. With the formation and country wide implementation of proper laws, 700 million Chinese people were raised above the poverty line, although 40 million people are still below the poverty line. China plans to eliminate poverty by 2020. Mr. Lijian stated that the Chinese government has provided subsidies for education as well as health. Ecological conservation has also been made a priority for improving quality of life of the masses.

Poverty can also be reduced by accelerating economic development by means of necessary infrastructure development in healthcare, education, transportation, etc.

Mr. Zhao Lijian, Deputy Head of Mission, Embassy of People's Republic of China to Pakistan

He mentioned that China's commitment to lifting the entire population out of poverty by 2020 is a crucial step in implementing the UN 2030 Agenda for Sustainable Development, embodying its sense of responsibility to the world as a major country. While combating poverty at home, China also actively helps other developing countries

to address their poverty problems.

H.E. Mr. Walid Abu Ali, Ambassador of State of Palestine to Pakistan, highlighted another facet of developmental challenges. He expressed his country's commitment to South-South Cooperation despite being under occupation. Faced with a number of challenges, Palestine vows to work for Science and Technology based economic development in the South.

There is a need to prioritize Africa for South-South Cooperation efforts and enhance the continent's representation in Science and technology-led platforms, like COMSATS.

H.E. Mr. Walid Abu Ali, Ambassador of State of Palestine to Pakistan

Ms. Anne Marchal, Deputy Head of Mission, Delegation of the European Union to Pakistan, noted that the 2014-2020 targets of European Union, are to enhance education and governance, provide public services, and contribute to peace and development. Mentioning Horizon 2020 (an EU project providing research and development opportunities in developing countries) in this perspective, she expressed that the goal is to produce world class scientists who work for the development of countries of the South as well as the North.

Science, Technology and Innovation are powerful tools for achieving sustainable development with due consideration towards climate change concerns of all the countries striving for and trying to sustain development.

Ms. Anne Marchal, Deputy Head of Mission, Delegation of the European Union to Pakistan



Mr. Esam Alqararah, Country Head, United Nations Industrial Development Organization (UNIDO), stated that his organization is working to promote South-South Cooperation not only through public sector but also private sector and NGOs.

Bilateral and multilateral cooperation between developing countries is required for efficient sharing of knowledge, technology transfer, and designing of innovative programmes.

Mr. Esam Alqararah, Country Head, United Nations Industrial Development Organization (UNIDO)

He looked forward to having effective collaborations with COMSATS for reaching out to its member states with relevant initiatives.

Speaking on the occasion, Mr. Shakeel Ahmad, Assistant Country Director (Development Policy Unit), United Nations Development Programme (UNDP), highlighted the financial aspects of UN's Sustainable Development Goals.

Without due allocations of resources and pooling, the objectives and gains of these goals cannot be achieved.

Mr. Shakeel Ahmad, Assistant Country Director (Development Policy Unit), United Nations Development Programme (UNDP)

He believed that despite fewer opportunities than challenges, the global South is emerging, but the transition from under developed state to developed state will take time.

Ambassador (R) Shahid Kamal, Advisor, Centre for Climate Research and Development (CCRD), COMSATS Institute



A participant during the Q&A Session

of Information Technology (CIIT), Islamabad, who also moderated the Forum, shared his thoughts regarding the growing importance of the South, relevance and increasing involvement of North, role of Science and Technology in South-South Cooperation, and collaborative partnerships and programmes. He believed that ten out of the total seventeen SDGs are related to Climate Change one way or the other. Underscoring the role of science and technology, he considered it absolutely crucial for the developing countries to be able to get ahead in the competitive world. The discussion and Q&A session at the end of the event touched upon the themes of:

- sustenance of S&T facilities and resources in the South for it to be able to exploit them for sustainable development;
- resilience of the traditional base in countries that have greatly alleviated poverty; and
- brain drain vs. brain gain.

Ms. Farhat Asif, President, Institute of Peace and Diplomatic Studies, concluded the event with a vote of thanks.



MEMBER COUNTRY IN SPECTRUM

The Republic of Tunisia



Tunisia, officially the Republic of Tunisia is a North African country, which covers an area of 165,000 sq km. The northern most point of Tunisia, Cape Angela, is known to be the northern most point of the African continent. Tunis, the capital of the country, is located on the north east coast. The Mediterranean sea borders the country to the North and east. Libya lies at the southeast, whereas Algeria lies to the west and southwest of Tunisia. The eastern part of Tunisia is Atlas Mountains and the northern part is the Sahara desert, with its oasis. The rest of the land of the country is fertile soil (CIA World Factbook, 2017).

The African conjunction of western and eastern parts of Mediterranean basin lies in 1,300 km long coastline of Tunisia. The Sicilian strait and the Sardinian channel features African mainland's second and third nearest points to Europe after Gibraltar. The north experiences a temperate climate with mild rainy winters and hot dry summers (CIA World Factbook, 2017).

The country is a unitary semi presidential representative democratic republic. Tunisia is considered to be the only full democracy in Arab world. The country has mixed legal system of civil law, which is based on French civil code, and Islamic law.

As of July 2017, the total population of Tunisia is estimated to be 11,403,800 (The World Bank). The Tunisian population is 98% Arabs, 1% European, and 1% Jewish. Official language of the country is Arabic. About 99.1% of the people living in the country are Muslims. The annual population growth rate of Tunisia is 1.01%. The largest segment of the country's population (43.38%) is between the age 25 to 54 followed by population segment (25.15%) aged under 14 (CIA World Factbook, 2017). The majority of population is located in northern half of the country where as the south remain largely under populated.

According to the Human Development Index, Tunisia ranks at 97 out of 188 countries and territories with an HDI value of 0.725 between 1990 and 2015, Tunisia's HDI value increased from 0.569 to 0.725, an increase of 27.3% (UNDP, Human Development Report, 2016). Between 1990 and 2015, Tunisia's life expectancy at birth increased by 6.2 years, mean years of schooling increased by 3.7 years



and expected years of schooling increased by 4.1 years. Tunisia's GNI per capita increased by about 86.2 percent between 1990 and 2015.

The Agriculture sector accounts for 11.6% of the GDP, industry accounts for 25.7% and services account for 62.8%. The industrial sector of the country mainly focuses on clothing, and footwear manufacturing, production of car parts and electric machinery, petroleum, mining, tourism, and beverages. The agricultural products of the country include olives, olive oil, almonds, grain, dates, tomatoes, sugar beets, citrus fruits, beef, and dairy products.

Tunisia is an export oriented country, which is in the process of liberalization and privatization of economy. Tunisia's diverse, and market-oriented economy has long been cited as a success story in Africa and Middle East. Major exports of the country include clothing, electrical equipment, semi-finished goods and textiles, hydrocarbons,

Table A: The Tunisia HDI Trends Based on Consistent Time Series Data and New Goal-posts

	Life Expectancy at Birth	Expected Years of Schooling	Mean Years of Schooling	GNI per Capita (2011 PPP\$)	HDI Value
1990	68.8	10.5	3.4	5,503	0.569
1995	71.5	11.6	4.1	5,967	0.608
2000	73.2	13.1	4.9	7,386	0.654
2005	74.2	14.2	5.8	8,455	0.689
2010	74.6	14.5	6.6	10,078	0.714
2011	74.6	14.6	6.9	9,723	0.717
2012	74.6	14.7	6.9	10,034	0.72
2013	74.7	14.7	7	10,141	0.722
2014	74.8	14.6	7	10,270	0.723
2015	75	14.6	7.1	10,249	0.725

Source: UNDP, Human Development Report, 2016

agricultural products, phosphates and chemicals, and mechanical goods. Major imports of the country are textiles, machinery and equipment, food stuffs, hydrocarbons, and chemicals. The country is in trading relationships with economic giants including France, Italy, Germany, Spain, Libya, China, and Algeria (World Bank, 2017).

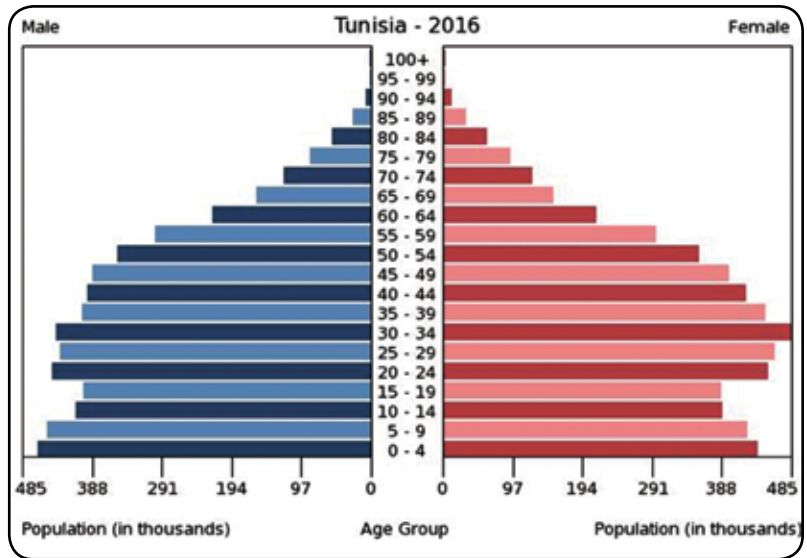
The Tunisian Ministry of Education is responsible for ensuring the right to education and training of all Tunisians. It facilitates public education and training systems. The Ministry of Higher Education and Scientific Research (MSESR) is the executive department for coordination of science and technology related projects of government of Tunisia. The ministry generates policies for development of science and technology in the country. MSESR is also COMSATS' Focal Ministry in the country.

The Ministry aims to elaborate and implement the policy of higher education and scientific research to: oversee the activities of universities, higher education and research institutions and research structures; supervise the academic life of the students and coordinate the activities of the offices of the universities; and coordinate and monitor international cooperation actions in higher education and scientific research.

The Ministry of Communication Technologies and Digital Economy has developed first Techno Park in Tunisia, Elgazala Technopark. The Technopark was created on the strategy of the development of communication technologies in Tunisia, Africa and worldwide. The Technopark is presented as an environment, which is specialized in the development of small startups and businesses as well as multinational ones, and it involves 90 companies. Among these, 12 are well-known international companies, including Microsoft, Ericsson, ST Microelectronics, etc.

Tunisia has an association agreement with the European Union. It is a member of the Union for the Mediterranean, the Arab Maghreb Union, the Arab League, the OIC, the Greater Arab free Trade Area, the Community of Sahel-Saharan States, the African Union, the Non-Aligned Movement, and the Group of 77. The country has also gained the status of major Non-NATO ally of the United States (CIA World Factbook, 2016).

Tunisia is a member state of the United Nations, and a state party to the Rome



Statute of the International Criminal Court. Tunisia owes its economic cooperation, privatization, and Industrial modernization to its close relations with Europe, especially, with France and Italy.

Tunisia's government is striving to boost economic growth quickly to mitigate chronic socio-economic challenges, especially high levels of youth unemployment. Tunisia Economic City is a city being constructed near Tunis in Enfidha. The city will consist of residential, medical, financial, industrial, entertainment and touristic buildings, as well as a port zone. The project is financed by Tunisian and foreign enterprises. Flourishing in the state of many challenges, projects like these will enhance the economy of the country and will lead to socio-economic development of the Tunisia.

Key Development Indicators of Tunisia				
Development Indicator	1990	2000	2010	2016
Population, total (millions)	8.23	9.7	10.64	11.4
Population growth (annual %)	2.2	1	1.1	1.1
Urban population growth (annual %)	3.7	1.6	1.4	1.4
Electric power consumption (kWh per capita)	632	977	1,364	1,444
Agriculture, value added (% of GDP)	18	11	8	10
Industry, value added (% of GDP)	34	30	32	28
Services, etc., value added (% of GDP)	49	58	60	61
Exports of goods and services (% of GDP)	44	40	50	40
Imports of goods and services (% of GDP)	51	43	55	51
Mobile cellular subscriptions (per 100 people)	0	1.2	104.5	125.8
Individuals using the Internet (% of population)	0	2.8	36.8	50.9
High-technology exports (% of manufactured exports)	2	3	5	6

Source: World Bank Indicators, 2017

ACTIVITIES/NEWS OF COMSATS' CENTRES OF EXCELLENCE

TÜBİTAK MAM-Turkey Strengthens Cooperation with British and Palestinian Institutions

On 27th September 2017, the Chief Scientific Adviser of British Foreign Ministry, Prof. Robin GRIMES, and officials from the Consulate General of the United Kingdom in Istanbul were received by the President of TÜBİTAK Marmara Research Center (MAM), Dr. Orkun HASEKİOĞLU. The meeting was also attended by the Vice Presidents of TÜBİTAK MAM, Assoc. Prof. Murat MAKARACI and Dr. İbrahim Bekar, Director of Business Development, Mr. Nuh YILMAZ and officials from the Energy Institute and Materials Institute. The delegation was briefed on the general structure of TÜBİTAK MAM, activity fields of Institutes, and possible cooperation areas.



Consulate General of UK to Istanbul with the President of TUBITAK MAM

Dr. HASEKİOĞLU also received the President of the Palestinian Higher Council for Innovation and Excellence (HCIE), H. E. Adnan SAMARA, on 27th September 2017. During the meeting attended by the officials of the Environment and Cleaner Production Institute, and Energy Institute, it was planned to hold a Workshop on water and energy in November 2017 at TÜBİTAK MAM.

State Minister of the Sri Lankan Ministry of Science, Technology and Research visited ICCES-China

Honorable Lakshman Senewiratne, State Minister of Science, Technology and Research, Sri Lanka, visited the International Center for Climate and Environment Sciences (ICCES), China.

During the meeting, Honorable Lakshman Senewiratne underlined the purpose of his visit, which is to seek bilateral cooperation with ICCES in an effort to meet the

local challenges in the field of extreme meteorological and hydrological events including rainstorm, flood and lightning.

Prof. Lin Zhaohui, Director of ICCES, welcomed the Honorable Lakshman Senewiratne, and gave the overview of the center, with focus on the recent progress and achievements on research priorities and international collaborations. In his introduction, Prof. Lin presented the cooperation activities between ICCES and Sri Lanka for the last 3 years, which include science and technology collaboration, scientists exchange and training activities, with a particular emphasis on the joint research progress on the extreme hydro-meteorological events in the Mahaweli river basin of Sri Lanka. Prof. Lin also expressed his sincere hope to pursue further collaboration with Sri Lanka based on its practical needs related to atmospheric sciences and technologies.

During his visit, the State Minister expressed appreciation of the statistical analysis and prediction results of Sri Lankan extreme events presented by ICCES.

NMC-Nigeria hosts Visit of Chairperson Mathematics Department CIIT

The National Mathematical Centre, Nigeria, hosted Prof. Dr. Moiz-ud-din Khan, Chairperson of the Department of Mathematics, COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, on his three day visit to the Centre from 11-13 September, 2017. The visit coincided with a two-day National Stakeholder's Meeting of Professors and Heads of Departments of Mathematics and Mathematical Sciences. The visit was also used to explore more avenues of collaboration between CIIT and NMC in the field of Mathematical Sciences.

In his welcome address, Prof. Stephen E. Onah, Director/Chief Executive of NMC, expressed the readiness of the NMC to sustain the existing cooperation and find new ways of cooperation with CIIT for the mutual benefits of the two institutions and the countries. Prof. Khan pledged to identify other areas of common interest in order to strengthen the existing cooperation and lauded the academic performance of most Nigerian postgraduate students studying at CIIT.

President RSS-Jordan, Princess Sumaya bint El Hassan, named UNESCO Special Envoy for Science for Peace

The Director-General of UNESCO, Ms. Irina Bokova, named Princess Sumaya bint Hassan, President of the Royal Scientific Society (RSS) of Jordan as a UNESCO Special

Envoy for Science for Peace (2017-2019) in a ceremony at the Organization's Headquarters on 2nd October 2017.

The recognition came as a result of recognition of her efforts to promote science as a power to bring countries together and contribute to positive changes in society, for her commitment to strengthening the development of scientific thinking in her country, and her dedication to the ideals and aims of the Organization.

As a UNESCO Special Envoy, the Princess will support the work of the Organization in science diplomacy, notably during the forthcoming World Science Forum, which will take place in Jordan from 7 to 11 November.



Princess Sumaya bint El Hassan receiving title of UNESCO Special Envoy for Science for Peace

KazNU-Kazakhstan and CERN reach an Agreement for Cooperation

The meeting with the delegation of the European Organization for Nuclear Research (CERN) took place at Al-Farabi KazNU-Kazakhstan National University, on 13th September 2017.

During the meeting, Prof. Galym Mutanov, Rector KazNU, noted that the University has great potential to further expand areas of cooperation in the field of nuclear physics, astrophysics, nuclear medicine, energy, and geology. More recently, the young scientists of the University were awarded fellowships at CERN and the students participated in the summer school and learned programming in accelerator physics.

Mr. Tadeusz Kurtyka of CERN noted that the organization is interested in joint activities with the KazNU because it has been implementing the program of transformation of the University into a research University of international level

and carries out fundamental and applied research in the field of nuclear science and technology. An outcome of the meeting was signing of a cooperation agreement aimed at joint activities in educational, scientific, and technical fields.

CIIT-Pakistan Fosters Collaborations with the North and the South

A two-member delegation comprising Prof. Kadambot Siddique and Mr. Paul Buist from University of Western Australia (UWA) visited COMSATS Institute of Information Technology, Islamabad, on 26th October 2017. The visit comprised a tour of the Institute's facilities and meetings with senior officials. CIIT faculty members briefly introduced the research focus of their departments and their own research interests in the field of Agriculture. The UWA delegation expressed readiness to host a team from CIIT.

On October 2, 2017, the Ambassador of the Federal Republic of Somalia, H.E. Khadija Mohamed Almahzoumi, visited CIIT. After the campus tour, Her Excellency received a briefing from senior officials of CIIT that led to discussions on various modes of collaboration between CIIT and Somalian Universities, scholarships offered by CIIT to member countries of COMSATS and OIC, as well as admission of Somalian students in graduate and undergraduate programs at CIIT. The Ambassador showed keen interest in admission of international students in CIIT and assured her cooperation in bringing students from Somalia.

Embrapa Agrobiologia-Brazil Competition Promotes Mobile Applications in Farming

The first edition of the Embrapa Academic Hackathon was held in Seropédica, in the State of Rio de Janeiro, on 19th October 2017. The event attracted students from Agronomy, Information Systems, Veterinary, and Agroecology. The theme of the Seropédica edition at Hackathon was Mobile solutions for sustainable production focusing on the functional attributes of Atlantic Forest plants and conservative biological control. Three participating teams developed the work and presented mobile applications focused on agricultural sustainability and recommendations for planting species. The winning team developed an application that could guide farmers and extensionists to choose species suitable for environmental restoration, considering factors such as soil, relief and drainage capacity. The second team developed an application to choose medicinal plants and their respective uses, while the third team set up a system with indications of native and exotic species to increase income.

SUSTAINABLE DEVELOPMENT IMPERATIVES AND RESPONSE TO SDGS

Fauzia Nasreen*

Human civilization is a story of insatiable quest for progress, advancement, change and transition to improved habitat and better living conditions. Development as a process of growing is, therefore, inseparable part of human existence and an essential instrument for the actualization of these instincts. Three different dimensions of development have been elaborated¹: economic growth linked with increase in per capita income and increase in individual income; social change over time or social mobilization characterizing transition to development, for example from agrarian society to industrialization in which technology in terms of means of transportation and communication plays an important role; and political development with an emphasis on the centrality of state which provides for an environment and structure conducive to overall development.

The realization of growth and development is inherent in the pursuit of knowledge, ideas and self-constructed vision of human excellence and advancement. However, these pursuits are not without friction, competition and rivalry resulting in unsustainable development and inequitable use of resources. Since natural resources are finite and their excessive exploitation becomes counter-productive to development objectives attempts have been made to make development sustainable through various means and interventions. Sustainable development is also meant to provide rationality between development and under-development and to ensure inter-generational equity. Sustainable development has aptly been defined as “development that meets the needs of the present world without compromising the ability of future generations to meet their own needs.”²

The adverse impact of unsustainable development coupled with rapid increase in population growth has posed serious and complex challenges to the planet where human existence is facing many threats. Poverty has been identified as a priority area which is closely interlinked with the other issues hindering the sustainable development agenda and adding volatility to the stable and secure environment. Together, climate change and the prevalence of wide ranging poverty are the two cross cutting issues that have received primary focus in the post-2015 development agenda. This inter linkage between poverty, climate change, development, peace and security has been echoed in the “five Ps” of the Sustainable Development Goals (SDGs)³ that are People, Planet, Progress, Peace and Partnership.

The focus on People, Planet and Progress runs throughout the 17 goals. However, poverty eradication remains the primary goal with an attempt to integrate various approaches to development.

Extensive scholarship has gone into establishing the new parameters for measuring development. The pioneering work of Dr. Mahboob ul Haq laying down the people-centric formula for measuring development in the 1980s seems to have laid down the foundation of international community’s development goals. The Human Development Index (HDI), which is a departure from a simple GDP and economic growth benchmark, takes into account such factors as life expectancy, education and per capita income. This approach combines the social and economic development aspects highlighted by Fukuyama in his lecture.¹ Building further on this concept Amartya Sen provided another window termed as ‘Capability Approach to Development’. He defined development as expansion of the capability of people the core of which is empowering people⁴. These ideas seem to have been amplified as inclusive development and building resilient communities within the sustainable development discourse.

Threats to the Planet constitute a vital component of sustainable development debate. Climate change discussions as an overarching theme is increasingly stressing on issues related to ecosystem, water on land and ocean, land erosion and degradation, deforestation and desertification. The occurrence of disasters is becoming more frequent causing loss of human life, property and to the economy. Climate change and the ensuing effects is leading to human displacements and migration, which result in unmet needs and create uncertainty and fear generating grievance, and frustration adding to the vicious cycle of violence and conflict. The conflicts and violence is driving people to move to safer locations to secure the future of their children. The migration phenomenon is having political ramifications accentuating conditions for what Samuel Huntington called The Clash of Civilizations.⁵

In the case of Pakistan, the frequent occurrence of natural disasters has resulted in serious impediments to achieving the development goals. With the multiple challenges being faced by the country future planning for minimizing the impact of climate change phenomenon and adaptation policies are further impaired. Moreover, the government structures and their capacity to deliver have been severely tested every other year because of floods due to the changing weather patterns, glacial melting and lack of effective mitigation measures. The need for good governance, smart policies and efficient structures that are sensitive to the needs of local communities and are ready to make the decision making process more participatory and inclusive is critical. It is hoped that with the passage of time the fruits of the 18th Amendment to the Constitution would enhance the prospects of service delivery in a more equitable manner.

*** About the Author:** Ms. Fauzia Nasreen is a former diplomat with an extensive experience as a practitioner of diplomacy, researcher, trainer and manager. Her area of expertise is public policy, policy analysis, peace and conflict resolution and defence and strategic issues. During her career spanning over three decades she served in various capacities in a number of missions. She has been ambassador to Nepal and Poland and High Commissioner for Australia. Ms. Nasreen has also been teaching as visiting faculty at prestigious higher education institutes of Pakistan, and currently heads the Centre for Policy Studies at CIIT. [Email: fauzia.nasreen@comsats.edu.pk](mailto:fauzia.nasreen@comsats.edu.pk)



Progress which is all-encompassing is the third important pillar of the post-2015 development agenda. It includes economic growth, industrial development, innovation, rural development, urbanization, infrastructure, entrepreneurship and livelihood, investment, technology and so on. Youth forms the cornerstone of most responses to the SDGs. The objective is to promote development that is even and “no one is left behind”⁶ and regional disparities are kept under check. The two critical failures of governance: uneven development and lack of regional cohesion have been the underlying cause of major upheavals. In the post-Cold War period there have been several episodes where people have spoken out against the inequitable and unequal governance structures and style. The increase in the number of intra-state conflicts after the demise of the Cold War points towards this phenomenon.

In the contemporary times in addition to several cases in the African continent, Afghanistan presents an oft-quoted example of reconstruction of post conflict societies. Though the process is ongoing and is still early to conclude the efficacy of the four pillars of transition: security; political; social; and economic. In such cases, development is meant to be transformative and is generally believed to be a decades-long process where divergent interests of the parties involved makes it cyclical rather than linear. In the case of Pakistan, in the Federally Administered Tribal Areas (FATA) transformative work has been started rather late in the day but it seems to be progressing well. The process is not yet complete as political and economic prongs have yet to be fully activated. The FATA reform package⁷ envisaging steps towards mainstreaming and integration, intends to ensure that all stakeholders are on board and more consensus is built to ensure its success. Can FATA reconstruction be judged on the basis of SDG parameters? Only time will tell. It could provide a sound insight into some aspects that pertain to peace, conflict and development.

Since the European Union (EU) is the “world’s largest provider of assistance to developing countries”, “has been the leading force in development cooperation” and “has been instrumental in shaping 2030 agenda for sustainable development”, it would be pertinent to briefly mention about the EU’s response to the SDGs.⁸ As the EU remains equally committed to the implementation of the post-2015 development agenda, and drawing inspiration from the 17 SDGs, the EU has declared its response in the form of “The New European Consensus on Development”. The primary objective of the development policy is eradication of poverty for which fully integrated economic, social and environmental dimensions of sustainable development would be linked with other policies of the EU. The traditional development assistance and other resources, both public and private, aided by sound policies would be utilized, both multilaterally and bilaterally by the member countries.

The framework developed for action puts emphasis on:

1. *Human Development and Dignity:* Global demographic shifts together with economic, social and environmental changes provide both challenges and opportunities. World population would increase to 2.4 billion by 2050. Africa alone would have 1.3 billion. Meeting education needs of children and youth is imperative for sustainable development; eradicating poverty

through multidimensional measures (20% of EU’s ODA has been allocated for the purpose); dealing with under-nutrition and mal-nutrition; poorest communities’ access to land, food, water, and clean and affordable and sustainable energy; universal access to safe drinking water, sanitation, and hygiene and health; quality education; meeting the needs of persons with disabilities; creation of jobs for youth; fulfillment of obligations under the Convention on the Elimination of All Forms of Discrimination against Women are the major themes.

2. *Protecting the environment, managing natural resources and tackling climate change:* Environmental degradation, climate change, extreme weather and natural or man-made disasters offset development gains and economic progress. They “increase vulnerabilities and needs, jeopardize peace and stability and cause large-scale migration.”⁹ Therefore, environmental considerations must be factored in an integrated manner across all sectors of development cooperation. EU would support the conservation and sustainable management and use of natural resources, sustainable use of biodiversity and ecosystems.
3. *Inclusive and sustainable growth and jobs:* Role of micro, small and medium-sized enterprises (MSMEs) is recognized by the EU as enablers of sustainable development. MSMEs are engines of growth, employment, innovation and social development. EU and its members will support action-oriented and innovative measures through development policy to enhance the role of MSMEs. It also includes sustainable agriculture as well as fisheries and aquaculture. The EU will aim to develop agriculture markets, value chains and encourage agro-industry.

Final Remarks: The purpose of highlighting the EU’s new development policy is to point towards opportunities for research and innovation by availing opportunities for development cooperation through the EU institutions.

References:

1. Francis Fukuyama, “What is Development?: Stanford University, 2013, www.youtube.com
2. Brundtland Report: Our Common Future, UN WCED, 1987, www.sswm.info/sites/default/files
3. Wayne Visser, “Sustainable Development Goals now has 5 Ps-UN Final Text” August 2015, www.linkedin.com/pulse
4. Sakiko Fukuda-Parr, “The Human Development Paradigm: Operationalizing Sen’s Ideas on Capabilities”, *Feminist Economics* 9 (2-3), 2003, 301-317, Routledge
5. Samuel Huntington, “The Clash of Civilizations”, Essay, *Foreign Affairs*, Summer 1993 Issue
6. The Sustainable Development Report “Leaving no one behind”, 2016, www.unsats.un.org/sdgs/report/2016
7. FATA Reforms, *Pakistan Today*, 13 March 2017, www.paktoday.com.pk
8. “The New European Consensus: Our World, Our dignity, Our Future” Luxembourg Office of the European Union, 2017, <http://europa.eu/>
9. Ibid.

SCIENCE, TECHNOLOGY AND DEVELOPMENT

Bio-fertilizer from Olive Mill Waste Water

Production of olive oil creates a large amount of wastewater, which can pollute waterways, reduce fertility of soil, and cause extensive damage to ecosystems. The Mediterranean countries produce 97 percent of world's olive oil. The olive mills generate almost 8 billion gallons of this wastewater annually. A study performed by scientists from American Chemical Society proposes development of an environmental friendly process, which can transform this pollutant into green biofuel, and bio-fertilizer for use in agricultural irrigation (*Science Daily*, 27th September 2017).



During the general short procedure, olives are crushed and mixed with water mills, oil is separated out of this mixture and dirty water and solid residue are discarded. According to the new technique, the olive mill water (OMW) is first embedded into cypress sawdust, which is another common Mediterranean waste product. The mixture is then dried rapidly and evaporated water is collected, which can be used for irrigation of crops. The OMW and cypress sawdust mixture is then subjected to pyrolysis, where it decomposes into combustible gases and charcoal. The gases are collected and condensed into bio-oil, which can be used as fuel. The charcoal pellets, which are loaded with potassium, phosphorus, nitrogen and other nutrients, are then collected and can be used as bio-fertilizers. The researchers found out that after five weeks of use, these pellets significantly improve plant growth.

Storing Renewable Energy in Sulfur Battery

A group of students from Massachusetts Institute of Technology have developed a battery that is powered by readily available materials including, sulfur, air, water and salt. The battery is around 100 times less expensive to produce than the commercial batteries these days. The battery can store twice the energy than lead-acid battery (*Cell Press*, 11th October 2017). In this battery, energy storage is coupled with renewable energy generation, which is one of the greatest challenges of energy sector these days.

The group focused on the potential of sulfur, an abundant non metal and a product of natural gas, as a core component of lightweight and inexpensive storage battery. These batteries are made up of positive anode (oxygen/air), negative cathode (sulfur), electrolyte (water) to carry the charge, and charge carrier (sodium/salt). The total chemical cost of this battery is \$1/kWh. The researchers plan to continue working to make their storage battery more efficient, drive down costs of the battery architecture, and increase its lifespan – it can currently operate up to 1,500 hours.

Genetic Markers Against Cassava Viruses Discovered

Scientists have identified genetic markers of resistance to two deadly viral diseases in cassava varieties of East African origin (*SciDev.Net*, 18th September 2017). The use of markers in breeding increases the efficiency and accuracy of breeding. It allows accurate selection of offspring from a cross with the desired combination of genes for dual CBSD/CMD resistance.

According to the scientists, the cassava varieties, Namikonga and Albert, which are genetically related to West African cassava TME117 are preferred by farmers and have been cultivated. Cassava brown streak disease (CBSD) and cassava mosaic disease (CMD) devastate cassava production in Africa. Severe CBSD infections may cause yield losses between 70 and 100 percent and, for CMD, the yield loss could be upto 95 percent, according to the International Institute of Tropical Agriculture (IITA). CMD is spread throughout Africa, while CBSD previously known to be a low altitude disease confined to the East African coastal lowlands has been reported in some mid to high altitude areas along Lake Victoria and Central African region. Further spread of the virus towards West Africa is predicted.



Scientists from Kenya, South Africa, Tanzania, and the United States crossed the two local cassava varieties — CBSD-resistant 'Namikonga' and CMB-resistant 'Albert' — through hand pollination, resulting in offsprings that have genetic markers resistant to the two deadly diseases.

Enhancing Biodiversity in Stream Waters

A study conducted by Cambridge University Researchers published in the *Journal of Invasive Plant Science and Management* features additional benefits of removal of invasive plant species beside restoration of streams. The study suggests that removal of invasive species growing alongside streams or rivers is involved in improving the biodiversity of aquatic organisms (*Science Daily*, 11th October 2017).

During the study, the invasive species of Amur honeysuckle shrubs growing alongside the headwater stream of Ohio were removed and it was observed that the diversity and population of insects, snails, worms, and aquatic macro-invertebrates significantly improved. The removal of honeysuckle improves availability of light in the stream as well as changes the quality of organic matter. The density, richness and diversity of organisms also improved in the stream.

PROFILE OF MEMBER COMSATS' TECHNICAL ADVISORY COMMITTEE

PROF. HUADONG GUO, CHINESE ACADEMY OF SCIENCES, BEIJING, CHINA

Huadong Guo is a Professor and Founding Director General of the Institute of Remote Sensing and Digital Earth (RADI) at Chinese Academy of Sciences (CAS). Prof. Guo is an Academician of CAS, and also a Foreign Member of the Russian Academy of Sciences (RAS). He is associated with The World Academy of Sciences (TWAS) as a Fellow for the advancement of science in developing countries that neatly corresponds to his membership of COMSATS' Technical Advisory Committee.



Previously, he served as Deputy Secretary-General of CAS, Director-General of CAS Institute of Remote Sensing Applications (IRSA) and Center for Earth Observation and Digital Earth (CEODE).

Born in 1950, Prof. Guo specializes in Remote Sensing science and its applications. He has a series of achievements in remote sensing information mechanisms, radar for Earth observation, and Digital Earth science. With extensive research in the Earth sciences, he has been one of the Principle Investigators for SIR-C/X-SAR, SRTM, JERS-1, ERS-1/2, Radarsat-1/2, and Envisat programmes, and over thirty major international and Chinese projects.

In his research, he systematically revealed the interaction mechanism between radar electromagnetic waves and certain ground targets; established a radar scattering geometric model for non-vegetated sand dunes; developed polarimetric radar theory for vegetation; and discovered the de-polarization phenomenon of volcanic lava and multi-polarization response phenomenon of plants, theoretically proving SAR's penetration abilities. He has also produced a method and model on multisource remote sensing for mineral exploration. He has established an observation system for all-weather, round-the-clock active and passive remote sensing for severe earthquakes.

Prof. Guo developed China's first Digital Earth Prototype System, and further conducted research on the digital Earth science platform, organized and developed a next-generation Earth Observations and Application system. He initiated the concept of scientific big data and big Earth data, and also initiated the concept of Moon-based Earth observation.

Prof. Guo currently serves as the President of the International Society for Digital Earth (ISDE), and the Chairman of the International Committee on Remote Sensing of Environment. He also holds the chair of the Director of the International

Center on Space Technologies for Natural and Cultural Heritage (HIST) under the auspices of UNESCO, and the Chair of the Digital Belt and Road (DBAR) programme. He is also a Science Committee Member of the Integrated Research on Disaster Risk (IRDR) programme, which is sponsored jointly by the ICSU, ISSC, and UNISDR. He is also the Director of the CAS-TWAS Center of Excellence on Space Technology for Disaster Mitigation (SDIM).

He has been the member of Global Advisory Council, Open Geospatial Consortium, and High-level Panel of Advisers to the Co-Chair of UNGAID since 2009. His past positions in other important fora include:

- President, ICSU: The Committee on Data for Science and Technology (2010–2014);
- Secretary General, International Society for Digital Earth (ISDE) (2006–2015);
- Member, Board of Directors, International Association of Global Spatial Data Infrastructure (GSDI) (2004–2006);
- President, Chinese Society of Remote Sensing of Environment (1996–2008);
- Member, International SAR Working Group (1992–2006).

He is the principal awardee of thirteen national and CAS prizes, including the China State Council's "National Outstanding Expert". He is also a recipient of an Honorary Doctorate of Science awarded by Curtin University in Australia. He also received the Boon Indrambarya Medal from the Asian Conference on Remote Sensing, the N.M. Przewalski Gold Medal from the Russian Geographical Society (RGS), and an Honorary Medal from the Cosmonautics Federation of Russia. His team on the project titled "Earth observation big data for climate change research" was recognized by the United Nations Global Pulse and was made one of the "Projects to Watch", designed to highlight particularly innovative uses of big data in emerging topics and geographic regions.

Prof. Guo has published more than 600 papers and sixteen books. He is the Editor-in-Chief of the "International Journal of Digital Earth", and is also the Editor-in-Chief of the "Big Earth Data" Journal, both published by Taylor & Francis.

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COMSATS' BRIEF AND ANNOUNCEMENTS

Selected Forthcoming Scientific Events in COMSATS' Countries

19-23 December 2017	7 th ISESCO-COMSATS-INIT International Workshop on Internet Security: Enhancing Information Exchange Safeguards, Almaty, Kazakhstan (www.comsats.org)
08-11 January 2018	MonaSymposium2018 – The Mona Symposium - Natural Products and Medicinal Chemistry, Kingston, Jamaica (www.monasymposium.com)
06-09 February 2018	CARIBMAT 2018 – Caribbean Conference on Functional Materials, Cartagena de Indias, Colombia (www.caribmat.org)
23-26 February 2018	The 1 st International Conference on Applied Agricultural Sciences and Prospective Technology, Luxor, Egypt (www.icaspt.com)

Scholarships offered by COMSATS' Centres of Excellence

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

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

Contact for more information: Mr. Tajammul Hussain, Advisor-Programmes (tajammul@comsats.org)

Science Vision - Call for Papers

COMSATS invites scholarly contributions for Volume 22 of its bi-annual journal, Science Vision, which aims at highlighting the important scientific and technological developments having a bearing on socio-economic conditions of the people. The journal now aims to focus more on science, technology and innovation policy. Relevant researchers and experts are encouraged to contribute insightful papers and articles to help policy makers and implementers in developing countries incorporate better policy practices in their development agenda. For more information, please visit the journal's website:

www.sciencevision.org.pk



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, Pakistan.

COMSATS, currently, has 25 developing countries as its members, spread across three continents, i.e., Latin America, Africa and Asia. A network, of 21 International S&T 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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