21ST ISLAMIC WORLD ACADEMY OF SCIENCES CONFERENCE
on
Science, Technology and Innovation for Global Peace and Prosperity

CONFERENCE DECLARATION

adopted at Konya, Turkey
on
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1. Science, Technology and Innovation (STI) are principal forces behind the advancement of civilisations. Human achievements have essentially been derived from innovation based on scientific discovery, invention, technological and engineering development, as well as the utilisation of science and technology (S&T) in all walks of life;

2. While science has been described as 'the intellectual and practical activity encompassing the systematic study of the structures and processes of the physical and natural worlds through observation and experiment,' innovation encompasses new ideas, devices, methods, or indeed the processes of introducing new ideas, devices, or methods. Technology - which can be either developed, acquired or transferred - is essentially the application of scientific knowledge for practical purposes;

3. The OIC science community has been unable to bridge the divide between knowledge creation and knowledge commercialization, as there is more to developing a national innovation system than simply physical infrastructure. Intangible considerations and values are vital, too. These include transparency, rule of law, intolerance of corruption, reward for initiative and drive, a healthy climate for business, respect for the environment and the dissemination of the benefits of modern S&T to the public, including the underprivileged. The Islamic world is going through a transitional phase where the current national innovation policies - where they exist - no longer meet the demands of young entrepreneurs in work and economy. Closing the innovation gap is an indispensable role of universities in Organisation of Islamic Cooperation (OIC) and developing countries; promoting innovation must become as important as teaching and research;

4. To further this enterprise, the IAS – in collaboration with SESRIC, the European Investment Bank through the Centre for Mediterranean Integration, plans to disseminate the innovation-barometer template to all OIC countries. The Innovation Barometer consists of two pillars: "Input and Enablers" and "Output and Impact". The second pillar, "Output and Impact" is constituted of statistical indicators that reflect the "Value-Added potential of the Private Sector", "Quality of Scholastic Output", "Business Impact" and "Intellectual Asset Formation". Stakeholders consider the innovation barometer to be an important and comprehensive instrument to policy makers, on the basis of a country's normalised scores, priorities for and obstacles to their countries' road towards an innovative, knowledge-based economy;

5. The 2030 Agenda for Sustainable Development enclosed in the document entitled "Transforming Our World: The 2030 Agenda for Sustainable Development" was adopted by the United Nations on 25 September 2015. The Agenda seeks to transform the world in which we live and forms the new global development framework anchored around 17 SDGs with a total of 169 targets covering economic, social development, and environmental protection. A major hypothesis however, at the heart of the SDGs, is political stability at the national and regional levels; something that the Islamic world has hardly enjoyed;

6. The IAS, by exploring the role that could be/is played by STI in achieving the SDGs advocates that sustainable development agendas should be assimilated into national political agendas. At the practical level, because humans and other living organisms are exposed to a variety of pollutants that are released into the environment as a consequence of anthropogenic activities, the ecological and toxicological effects generated by different pollutants need to be measured. Otherwise these can induce adverse effects on human as well as ecosystem health;

7. Biological monitoring (BM) (biomonitoring) defined as the detection of substances (biomarkers) in biological samples helps in the assessment of exposures to specific chemicals and their potential risks. At the level of OIC countries, little information is available on such programmes. This is true for phytoremediation as a management option for contaminated areas, the toxicity bioassays for ecological risk assessment in arid and semiarid ecosystems, as well as plant and animal toxicity bioassays. For this reason, the IAS, in collaboration with all relevant organizations, will work to develop a biomonitoring template for OIC-member countries and developing countries;

8. For science, technology and innovation to become effective and transformational, a culture of science appreciation has to be engendered; people's talent and skills need to be enhanced essentially through promoting science, technology, engineering, mathematics and medicine (STEMM) education at all levels;

9. At the OIC level, a comprehensive relook at medical education is in order. The Fourth Industrial Revolution, new epidemiologic trends (e.g. aging, rise of noncommunicable diseases), new learning trends, advent of technologies (medical and pedagogical), rising costs of healthcare and health financing, global health trends, disenfranchised and vulnerable populations, differing health systems, climate change and diminishing values are aspects that need be strengthened or incorporated. More engagement between social sectors with the health profession and more interconnectedness between health agencies and personnel and health systems are required. The learning/teaching environment needs be re-evaluated and re-organised. The medical profession, the medical school and the society need to be receptive of these realities and the need for changes;

10. Archetypal as it may sound, governments must improve the governance of science at the national level by building up their STI systems, engaging the science community, adopting and adapting promptly their national STI policies, developing innovative ways to raise Gross Expenditure on Research and Development (R&D) to that elusive 1% by involving stakeholders from the private sectors, strengthening networks of centres of excellence, empowering women and young scientists and stimulating policy debates;

11. Science cannot emerge without a scientific culture - a culture that appreciates learning and inquiry and encourages curiosity and criticism. History tells us that the Muslims of the eighth century were not only well versed in Islamic 'sciences,' which were primarily based on the teachings of Islam, but were also curious about the physical world and were keen on exploration and discoveries. To address such questions, the IAS will help convene a Task Force that includes theologians, historians, philosophers, scientists and science communicators to better understand both historical and current determinants of a 'Culture of Science' in the Islamic world. In the process, the IAS will revisit the question of the further assimilation of 'Social Science and Humanities' into the STI ecosystem;

12. The IAS recognises the crucial role of champions of STI; and the presence of a sound, independent scientific advisory system that can improve the quality of science-based decisions on policy-making. The IAS welcomes the recent global trends for the more pronounced use of science in policy-making and the efforts to bridge the divides in the roles of scientists and policy makers. Needless to say the launch of national science academies in OIC countries where such entities do not exist is an imperative in this regard;

13. Scientific co-operation at the level of the OIC is essential to build capacities to harness modern science particularly through leveraging well established OIC S&T agencies including COMSTECH[1], the IDB[2], SESRIC[3], the ISESCO[4], the IAS as well as universities, research centres and academies of sciences. Newly launched initiatives such as the Technology Bank for Least Developed Countries (LDCs), administered by TUBITAK in Turkey, and the Intellectual Property Rights (IPR) Bank must also be leveraged as part of this effort; and

14. Notwithstanding the magnanimous efforts made by refugee-hosting countries in the Middle East such as Iraq, Jordan, Lebanon and Turkey in terms of the provision of shelter, food, water; to ensure the adherence to the universal right to education such governments are urged to provide education for all displaced people residing in their countries with the full support of the UN, the other relevant agencies and the international community.

LASTLY, THE ISLAMIC WORLD ACADEMY OF SCIENCES (IAS):

Extends its appreciation to His Excellency Recep Tayyip Erdoğan, the President of the Republic of Turkey for his patronage and support; to the two IAS Patrons (H E the President of Pakistan and HRH Prince El-Hassan bin Talal), to all the dignitaries who have sent messages of support to the conference; to the Turkish Academy of Sciences (TÜBA) and Necmettin Erbakan Üniversitesi for co-organising and sponsoring the conference; to the Arab Fund for Economic and Social Development (AFESD); to the Economic Cooperation Organization Science Foundation (ECOSF); Islamic Development Bank (IDB); COMSTECH and the Arab Potash Company, for generously co-sponsoring this international scientific congregation.

[1] OIC Ministerial Standing Committee on Scientific and Technological Cooperation, Islamabad, Pakistan.
[2] Islamic Development Bank, Jeddah, Saudi Arabia.
[3] Statistical, Economic and Social Research and Training Centre for Islamic Countries, Ankara, Turkey.
[4] Islamic Educational, Scientific and Cultural Organization, Rabat, Morocco.