STI FORUM

Science, Technology & Innovation for the Sustainable Development Goals

Sixth annual Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals

Session 5: Emerging science and technology trends, challenges and the SDGs

Background

The fast pace of technological change in fields such as robotics, artificial intelligence, biotechnology and nanotechnology are having broad impacts on the economy, society and environment. Such disruptive technologies can be vital for breakthroughs in achieving the SDGs, but they can also have un-anticipated consequences, exacerbate inequalities, and constrain economic catch-up development. Calls for a more responsible and ethical deployment of such technologies must contend against those who fear that damping down on innovations may deprive people of benefits. To harness the benefits and reduce any downside negative risks, countries need to be able to make informed decisions, while also building skills and capabilities for the future. Multi-stakeholder engagement is important, as many of these advances are initiated in the private sector and academia, but then have differentiated impacts across groups of people and societies.

The enduring COVID-19 crisis has accelerated innovations in some areas and hindered them in others. Important lessons could be learnt for dealing with other global sustainability crises in the future. Our pandemic responses have also amplified existing technological and social divides between countries and groups of people, as the world has moved social and economic interactions online. What is needed for closing global technology divides post-COVID? What can we learn from the successes and failures of frontier technologies during the past year for future crises and for innovation acceleration in general? Answers to these types of questions are difficult but hold the key towards a better common future.

The pandemic has also stimulated a discussion on the role public support for science and technology development with high social returns. To take the example of vaccines, their associated science and technology had already progressed significantly in recent years before the COVID-19 pandemic, but funding for researchers and innovators has been difficult to come by. The current pandemic – an enduring global crisis – has been a powerful driving force for innovation. In a record time, several COVID-19 vaccines have become available and more than one hundred COVID-19 vaccines are under development or in trials. Around a billion vaccine shots had already been administered world-wide by 21 April 2021– barely one year after the WHO declared the pandemic. Compared to the past, this is an incredible scientific, technological and logistical achievement. Indeed, the crisis has revealed the irrationality of strategic behaviours which were considered rational before. The big question is what could be done to provide a commensurate level of support to the science and technology of vaccines, medicines, and many other sustainability solutions. In other words, how can we supercharge the global innovation system that in "normal times" apparently has operated well below its potential.

Objectives

This session will explore the latest developments in science and technology and their current and potential future impacts on sustainable development and the SDGs. As mandated by the GA, the session will include updated elements of "TFM findings on the impacts of rapid technology change on the SDGs", bringing together views of experts from the UN system, 10-Member Group, scientist and engineers active in the TFM. The session will explore technology convergence and the multiple technology divides, including gender digital divide, and other challenges associated with these trends related to clusters such as blockchain, biotechnology, nanotechnology, artificial intelligence and quantum technologies.

Format

The session will be structured as a moderated panel discussion (5 minutes per panelist). Following a special presentation of the "TFM findings" by the UN chief economist, panelists will make their interventions. Thereafter, the moderator will take comments and questions from the audience during an interactive discussion. The session will close with a brief presentation of main outcomes of the discussion by the moderator.

Questions for discussion

The discussion will be guided by the following questions:

- What have been the achievements and failures of emerging science and frontier technologies during the COVID-19 crisis? What lessons can we learn for other sustainability crises? And how can we supercharge the global innovation system that in "normal times" apparently has operated well below its potential?
- What opportunities and risks does recent rapid technology change have for developing and developed countries? What have been the wider societal impacts since 2015? What are the implications for SDG pathways? How can countries best prepare for these changes?
- How can the world close global science and technology divides and achieve the SDGs by 2030? What are the implications of technology convergence for sustainability?
- What are your three most important recommendations for policy and concrete action?

Supporting documents/publications

- TFM findings on the impacts of rapid technology change on the SDGs (IATT, May 2021)
- IATT report for the STI Forum: "Emerging science, frontier technologies, and the SDGs – Perspectives from the UN system and science and technology communities" (IATT, May 2021)
- UN Technology and Innovation Report (UNCTAD, 2021)
- Harnessing blockchain for sustainable development: prospects and challenges (March 2021)