Extract from the civil society report
Spotlight on Sustainable Development 2019
www.2030spotlight.org

SDG 17

Can the Technology Facilitation Mechanism help deliver the SDGs in the era of rapid technological change?

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As the international community reels from massive inequality in wealth and aspires to leave no one behind by 2030, the world stands at the brink of a technological revolution. Frontier technologies are sweeping across the land like wildfire and leaving unprecedented disruptions in their trails. Artificial intelligence and machine learning are transforming not just the landscape of manufacturing and services sectors, but revolutionizing every aspect of life and work. Automation and robotics are displacing jobs in industries and bringing in new challenges to decent work. Digitalization in agriculture is resulting in historic mergers and acquisitions and vertical integration that attract unconventional players like technology platforms into the sector. Synthetic biology is gradually eroding the markets of high-value low-volume commodities of developing countries, which could potentially wipe out the livelihoods of traditional farmers. Financial technologies, digital finance and investment, and cryptocurrencies that claim to be decentralized and inclusive are bringing in new players and forcing banks to adapt their operations. Supercomputers and cloud storage are enabling the digitalization of data including on biological and genetic resources, redefining how they are governed. Big Data has made technology platforms so powerful that their spheres of influence are threatening the core foundation of democracy.

Concerned about the potential impacts of so-called 'exponential technologies' on developing countries and on achieving the SDGs, Mexico with a number of developing countries, sponsored a resolution requesting a report on the subject by the Technology Facilitation Mechanism at the 72nd session of the UN General Assembly in 2017[1] which was reiterated at the 73rd session in 2018.[2] The government of South Korea was the first to impose taxes on and remove subsidies from factories that use robots to compensate for displacement of workers. As governments grapple with how to deal with these rapid technological changes, the UN invited a robot named Sophia developed by a private robotics company to speak in a panel and interact with Member States in a joint meeting of the Second Committee of the UN General Assembly and ECOSOC in October 2017.[3] Two weeks after, Sophia the robot was granted citizenship by the Kingdom of Saudi Arabia, the first country to have bestowed citizenship to a humanoid.[4]

Multiple UN initiatives on new technologies

UN agencies are reacting in different ways to this technological tsunami. Some have embraced particular technologies by promoting inclusive development

1 UN General Assembly (2017).

2 UN General Assembly (2018).

3 United Nations, video clip from the joint meeting of the Second Committee and ECOSOC on "The future of everything – sustainable development in the age of rapid technological change", 11 October 2017 , see https://www.youtube.com/watch?v=qNoTjrgMUcs.

4 Arab News, "Saudi Arabia becomes first country to grant citizenship to a robot", 26 October 2017 see: http://www.arabnews.com/node/1183166/saudi-arabia.

and equitable access. The International Telecommunications Union (ITU) since 2017 has convened the AI for Good summit series as an action-oriented platform for dialogue on AI aimed at ensuring "trusted, safe and inclusive development of AI technologies and equitable access to their benefits". The World Food Programme (WFP) is testing out blockchain and the use of cryptocurrency for its hunger relief work by facilitating cash transfers to beneficiaries.[5] Other UN agencies are adopting a more cautious approach and struggling with how to cope with the impacts of new technologies on their mandates and on the existing treaties and norms agreed by UN Member States. The Convention on Biological Diversity (CBD) has been deliberating on whether or not synthetic biology and genome editing are covered by its biosafety protocol and on the implications of digital sequence information on its protocol on access and benefit sharing. The Seed Treaty is likewise grappling with the impacts of de-materialization of genetic resources on implementation of farmers' rights and material transfer agreements. There is a raging debate about which part of the UN is responsible for governance of geoengineering, the deliberate large-scale manipulation of climate systems.

The UN Secretary-General came out with a "Strategy Paper on New Technologies" in September 2018 outlining his priority directions in harnessing the potentials of new technologies while addressing concerns and impacts.[6] He convened a High-Level Panel on Digital Cooperation in July 2018, led by big names in the world's leading technology platforms, to help raise awareness on the transformative impact of digital technologies, to contribute to public deliberations on ensuring safe and inclusive digital future and to come up with proposals for cooperation among various actors.[7] The Secretary-General also created the Task Force on Digital Financing of SDGs, comprised of top-level UN officials and finance experts from the private sector, in November 2018 to harness the potentials of financial technologies, including the use of blockchain, digital finance and investments to advance the SDGs.[8]

The Technology Facilitation Mechanism

Despite the General Assembly Resolution mentioned above, curiously missing in all these UN initiatives to make sense of the technological wildfire is the involvement of the mechanism that the UN established to mobilize science, technology and innovation (STI) for the SDGs: the Technology Facilitation Mechanism (TFM). Created in 2015 on the heels of Rio+20 as one of the key means of implementation of the 2030 Agenda for Sustainable Development, the TFM was hailed as one of the few positive outcomes of the Addis Ababa Agenda for Action.[9] The idea was proposed by the G77 and China in response to developing country frustration over the absence of a dedicated institution at the UN to help developing countries address the challenges and obstacles to access technologies for sustainable development. Developed countries stridently opposed the creation of a new institution and argued that concerns on STI are already addressed by specific UN agencies and, in the case of intellectual property rights, in the World Trade Organization (WTO). As a result of compromises between irreconcilable views, the mandate of the TFM is deliberately nebulous at best, raising more questions and cautious expectations.

Instead of a new institution, a mechanism was established with elements that aim to ensure coherence, coordination and collaboration among UN agencies, governments and various stakeholders towards mobilizing STI for the achievement of the SDGs.[10] An inter-agency task team (IATT) on STI for the SDGs, comprised of UN agencies, was created with mandate on technology development and transfer supported by a multi-stakeholder 10-Member Group appointed by the UN Secretary-General. The annual STI Forum is envisioned as a multi-stakeholder process that facili-

5 World Food Programme, "Blockchain for Zero Hunger; Building Blocks", see https://innovation.wfp.org/project/building-blocks.

6 UN (2018).

7 See https://www.un.org/en/digital-cooperation-panel/.

8 See www.un.org/sg/en/content/sg/personnel-appointments/2018-11-29/task-force-digital-financing-sustainable-development.

9 Third World Resurgence No. 300, August 2015, pp. 12-14, https://www.twn.my/title2/resurgence/2015/300/cover03.htm.

10 UN (2015), para. 123.

tates sharing of experiences and lessons on the role of STI for implementing the SDGs, promoting exchanges and transfer of technology and innovations, enabling matchmaking between technology providers and users, mobilizing support and resources from various actors, and so on. The co-chairs of the STI Forum, two diplomats from developed and developing countries designated by the ECOSOC President, are tasked to sum up the two-day discussions to be presented at the HLPF. The STI Forum has managed to attract participation from governments, academic institutions and the business sector, although only marginally from civil society organizations, which send representatives to the annual forum and its parallel events at their own expense. The development of an online platform to comprehensively map and serve as a gateway for information on STI programs, mechanisms and initiatives has yet to take off from the recommendations of an independent assessment due to absence of financial resources.

As the UN struggles to implement the vague mandate of the TFM with no dedicated funding, the relevance of the new mechanism seems to have been pushed into a very limited space delinked from the UN responses to rapid technological changes while its role is to mobilize STI for the SDGs. The upcoming review at the HLPF on sustainable development should address concerns on how the mechanism created to support the achievement of the SDGs through STI could effectively deliver in the face of frontier technologies and in the midst of disparate UN approaches towards new technologies. The untapped potential of the STI Forum as a multi-stakeholder platform to deliver STI for SDGs must be harnessed by bringing together the various initiatives of the UN on new and emerging technologies under one umbrella. The platform should not be limited to those that embrace and promote inclusion in specific technologies but more urgently should enable societal deliberations on how frontier technologies are redefining established norms and impacting on the achievement of the SDGs, and how these should be governed.

The aspiration of the TFM as a global mechanism for horizon scanning, early warning and technology assessment should be realized by bringing various UN initiatives on new technologies under its wings.

The multi-stakeholder nature of the STI Forum and the TFM in general is an ideal space for such deliberations and ensure that outcomes directly feed into the implementation of the 2030 Agenda. The recognition of broad sources of knowledge, gender issues and grassroots innovation are important pillars for bringing in diverse and inclusive views in deliberations on potentials and challenges associated with new technologies. Understanding potential impacts of new technologies can best be done with direct participation of those who are actually or potentially affected, not just by proponents of technologies. Such awareness is critical in designing interventions to build capacities of governments, institutions and stakeholders at the national, regional and global levels to govern frontier technologies to advance the public good.

Greater coherence on means of implementation needed

More coherent links need to be established between the annual Financing for Development (FfD) Forum and the STI Forum as parallel review streams of two most crucial means of implementation for the 2030 Agenda. This could also help efficient utilization of the limited funds available for the implementation of the TFM. Operationally, the review of progress of the TFM falls under the FfD Forum since the latter was created as a means of implementation for the 2030 Agenda under the Addis Ababa Agenda for Action.

The HLPF Review should lead to operationalization of stronger coherence and coordination in the work of the TFM and the Commission on Science and Technology for Development (CSTD) which is the principal arm of the UN General Assembly on STI.

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