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Special G-STIC Event on "Accelerating Technological Transitions Towards the SDGs" 7 June 2018

The G-STIC Special Event on "Accelerating Technological Transitions Towards the SDGs" convened for a half-day on 7 June 2018 at UN Headquarters in New York, US, in the context of the UN's third annual Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals (STI Forum 2018). G-STIC, the Global Sustainable Technology & Innovation Conference series, is a non-governmental initiative of independent non-profit research institutes, which organizes a yearly summit in Brussels, Belgium, and various intersessional activities in the context of intergovernmental processes on technology and innovation.

The Special Event shared key outcomes from the first edition of the Conference, in 2017, as well as the third STI Forum. It also showcased examples of market-ready, integrated technological solutions for advancing the SDGs, and offered an early look at themes to be discussed at G-STIC 2018, convening in Brussels, Belgium, from 28-30 November.

The Special Event had six co-hosts: VITO, African Centre for Technology Studies, Asian Institute of Technology, FIOCRUZ, TERI and the Indian Institute of Technology Delhi.

Opening Remarks

Opening the special event, Veerle Vandeweerd, Policy Director, G-STIC, welcomed participants on behalf of the co-hosts.

Ambassador Juan Sandoval Mendiolea, Deputy Permanent Representative of Mexico to the UN, spoke in his capacity as co-chair of the 2018 STI Forum, which had concluded the previous day. He said the Forum had articulated a vision for actions to take at the UN, and he called for breaking the persistent silos on technology and innovation within the UN.

Ambassador Toshiya Hoshino, Deputy Permanent Representative of Japan to the UN, also speaking as co-chair of the 2018 STI Forum, said discussions at the Forum had noted the need for roadmaps to make science and technologies more widely available. A solution, he said, "is only useful if it is available to everyone in all countries."

Lotta Tähtinen, UN Department of Economic and Social Affairs, said a summary of the discussions at the STI Forum will feed directly into the July 2018 session of the UN High-level Political Forum on Sustainable Development (HLPF), which will address the same sub-set of SDGs as the Forum: SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 11 (sustainable cities and communities), SDG 12 (responsible consumption and production), SDG 15 (life on land), and SDG 17 (partnerships for the SDGs). She highlighted cross-cutting issues affecting these SDGs, such as: the impact of rapid technological change; how to leverage national STI plans, policies and capacity building for SDG implementation; and the role of local and indigenous knowledge.

Remarking on the need for "major technological transitions" to achieve the SDGs, Vandeweerd said solutions must be socially inclusive, affordable, profitable, scalable, and technologically efficient. She said that the 'S' in G-STIC, which originally referred to "science," has been changed to represent "sustainable," and the movement has a defined focus on market-ready, integrated technological solutions that can have an impact on achieving the SDGs.

Vandeweerd also highlighted key findings from G-STIC 2017. First, many of the needed technologies to achieve the SDGs are available; what is lacking is policies to bring them to scale in developing countries. Second, food and energy for all (SDGs 2 and 7) cannot be achieved without applying agro-ecological, contextualized technological solutions. Third, materials and resources currently considered waste, such as wastewater and carbon dioxide (CO2), could be recovered and used as resources in a circular economy or "Industry 4.0" scenario.

Paulo Gadelha, former President & Coordinator Strategy for 2030 Agenda, FIOCRUZ, and member of the 10-Member Group to support the UN's Technology Facilitation Mechanism, discussed G-STIC's new cluster on health and STI for advancing the 2030 Agenda. He noted the "grand convergence" between health and STI, and yet a divide in the governance of this intersection, pointing out that 1% of health R&D funding is allocated to diseases found predominantly in developing countries.

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Gadelha also stressed that the health field requires "specific features" in order to bring innovation to people in need. Health organizations must mediate, and government has a key role to play through regulation, he said, flagging the importance of advancing universal health care. Gadelha said G-STIC 2018 will include a thematic session on health.

Deep Dive Into Integrated Technological Solutions

Stakeholders presented examples of specific technologies with the potential to advance the SDGs. Dirk Fransaer, Managing Director, VITO, showcased two projects that exemplify the "integrated" approach to technological solutions, and explained how integration can make projects profitable. First, a deep geothermal site in Belgium taps into the earth's heat – an inexhaustible resource – to generate electricity, reducing household CO_2 emissions without needing to rebuild energy-inefficient homes. He said subsidizing solar and wind energy is too costly to reach the scale needed to achieve climate goals on time.

In a second example, Fransaer illustrated how water sanitation and household waste management can be combined to advance renewable energy: "if you do them separately, you pay three times; combine them, and you can make a profit." Depending on the region, household waste may contain the right amount of organic materials that, when combined with concentrated wastewater, can spur anaerobic digestion and create gas to be converted into electricity. Fransaer called for policies to encourage ministries to work together to apply existing technologies, thus achieving integrated solutions.

Luis Neves, Managing Director, Global e-Sustainability Institute (GeSI), provided an "industry perspective" on how digital technology can affect the SDGs. Neves described GeSI's Digital Access Index, which uses 21 indicators to track the digital industry's impacts. He said GeSI is finalizing a "robust and credible methodology" for generating insights based on data, to steer the impact of the digital industry.

Sharing findings for the first time, Neves reported that the strongest positive correlations between digital and the SDGs are found in the areas of infrastructure, health and decent work (Goals 9, 3 and 8), and the strongest negative impact is in the area of electronic waste (e-waste), covered by SDG 12. Specifically, he reported that a 5% increase in digital access has correlation/causation with: two babies saved for every 1,000 live births in least developed countries; two weeks of additional schooling for each female learner; and reduced consumption-based CO2 emissions equivalent to the closure of 450 coal plants globally.

Owen Rodgers, Chief Architect, AT&T, noted that people in cities produce more emissions, making cities humanity's "consumption engine" in addition to its growth engine. He said AT&T works with cities on using the "internet of things" to reduce vehicles' idling times in traffic, update residents on air quality, adjust streetlamps based on activity and daylight, and facilitate citizen engagement with their government. He added that the technology community must figure out how to deliver solutions in low-income settings.

In a question-and-answer session, participants: noted the need for different health-related sciences to come together; stressed the value of open and federated data platforms; inquired about opportunities for decentralized energy solutions; and expressed concern about innovating without consideration for leaving no one behind.

Gender Mainstreaming and Youth Engagement as Cross-Cutting Themes of G-STIC

Helene Molinier, UN Women, began the session by suggesting that events on technology should include female experts, not just in discussions of social issues, but also in the technical portion. She said most of the targets of SDG 5 (gender equality) will be unmet in 2030 if current trends continue, but technology and innovation present opportunities to "be disruptive" and remove barriers to progress. She said UN Women's technology and innovation unit is working to apply gender-smart solutions to empower women farmers, such as by using blockchain for land registries, climate-smart text messages, and AI and alternative data for credit scoring to secure financing.

Molinier also reported that women make up a low percentage of those creating apps and studying STEM, and they earn less in STEM fields. To address these trends, she called for the design process to include women as users, a high-level commitment to a gender-responsive approach to technology, and for evaluating the impact of a data-driven approach, including by looking at long-term impacts of an innovation on women and girls.

Representing Felipa Luisa Perez Angeles of the women's cooperative Milpa Maguey Tierno de la Mujer Sociedad de Solidaridad Social in Mexico, Jozelin Soto Alarcon described how 20 indigenous women and one man have organized to improve the use of local resources like agave, while strengthening members' access to property. The cooperative has been producing agave syrup for 25 years, as a means to meet households' economic needs while using local resources sustainably. The cooperative carries out reforestation, uses solar panels and other alternative sources of energy, and emphasizes the use of local and indigenous knowledge.

Louise De Tremerie, UN Major Group of Children and Youth, stressed that technology, inherently neither good nor bad, must maximize potential benefits and minimize potential harms. She called for technologies that are both human- and planet-centered, as well as context specific. While young people are excited about new technologies, she said, they also express concerns about privacy, environmental consequences, data management and ethical usage. She also noted the risk of entrenching technological "haves and have-nots" due to unequal access and affordability.

Closing the special event, Vandeweerd agreed that technological developments have not always had positive environmental impacts, and urged youth to "please take over, lead the way, and bring us to a sustainable world."