

## **Commission on Science and Technology for Development (CSTD)**

### **Contribution to the 2024 High-level Political Forum on Sustainable Development**

This note synthesizes findings from the Commission on Science and Technology for Development (CSTD) as a contribution to the High-level Political Forum (HLPF) scheduled to take place from 8 to 17 July 2024. It follows the outline proposed by the HLPF secretariat and draws on the two priority themes of the CSTD during the 2023-2024 inter-sessional period, namely (a) Data for Development; and (b) Global cooperation in STI for Development; and the findings and recommendations that emerged during the Inter-sessional Panel held during 6 to 7 November 2023. These findings and recommendations will be considered by the CSTD during its 27th annual session on 15-19 April 2024. The 27th session of the CSTD will also review progress made in the implementation of the outcomes of the World Summit on the Information Society and discuss the WSIS + 20 review that will be undertaken by the General Assembly in 2025.

#### **1. Impacts of multiple crises on the implementation of SDGs 1, 2, 13, 16 and 17 from the vantage point of your intergovernmental / expert body.**

The world faces multiple international challenges that have derailed the sustainable development trajectory of most countries and complicated the implementation of all SDGs, including SDGs 1, 2, 13, 16 and 17. The economic recovery from the Covid-19 pandemic was still incomplete when the global shocks of higher food and fuel prices, and generalized higher rates of inflation, hit all countries. Growing debt burdens and fiscal fragility has followed closely in many countries. Thankfully the pandemic itself has subsided. But it has derailed the sustainable development trajectory of most countries, and hurt the poorest and most vulnerable hardest of all. These come on top of growing inequality and the more longstanding challenge of promoting structural transformation in developing economies. Meanwhile the climate emergency continues to wreak economic damage across the globe. The economic, social and environmental challenges we face are daunting. A new development crisis has emerged with setbacks across the SDGs. The only road to overcome the worst trajectories for the future and create a way out is through coordinated, collective global action across countries. The CSTD has not looked at multiple crises as a specific theme, but has looked at different aspects of harnessing STI for addressing elements of these crises, such as STI for agriculture and food security, STI for renewable energy, STI for clean water and sanitation, ST for health and tackling health pandemics, STI for economic diversification and growth as well as reducing poverty etc. But clearly STI should play a role in national policies of all countries to address key elements of the multiple crises at this current point in time. Indeed, the multiple crises are inter-related and require a systemic approach that looks at the inter-relationships rather than a piecemeal, siloed perspective.

The CSTD has examined the priority theme on “Global cooperation in science, technology and innovation for development” which is directly related to SDG 17 on partnerships for the SDGs. Developing countries must act to enhance their STI capabilities and strategically position themselves to take advantage of current and upcoming technological opportunities. However, the success of national policies also depends on global cooperation and the international community has a crucial role to play

in supporting developing countries to strengthen national capacities in STI and to facilitate their participation in global science and technology networks. At the international level, there are good practice examples of international collaboration on R&D, innovation and capacity building for STI. These include for example the CSTD, which plays an essential role in facilitating discussions and consensus-building on critical issues related to science and technology. Speakers at the CSTD have called on member states to harness the CSTD as a forum for international cooperation and crafting a convergence of views, not rivalry, on science, technology and innovation (or STI) as tools for promoting sustainable development. Given the enormous challenges related to global processes such as climate change, biodiversity and pollution, much more international collaboration on STI is needed to promote the SDGs. However, the scope for effective multilateral STI collaboration has been undermined by rising geopolitical tensions in recent years.

The CSTD has also examined this year the priority theme of “Data for Development”, which includes important aspects of international cooperation on data issues that support the SDGs. The rapidly evolving data landscape has underscored the constraints faced by individual nations in constructing a robust data governance framework. International digital collaboration has emerged not just as a desirable approach, but a necessary one to create adequate data governance frameworks for the global community. The global discourse on data governance has gained momentum in recent years, shifting from preliminary discussions to actionable strategies. Leveraging existing platforms, like the Internet Governance Forum (IGF) and the World Summit for the Information Society +20 Review, can provide valuable frameworks for these conversations. The Global Digital Compact (GDC) that is currently under discussion, could present opportunities for synergies and complementarity with the actions undertaken by many WSIS stakeholders. The CSTD, with its longstanding experience in bringing together, through the WSIS review process, evidence, perspectives, expectations and concerns about the progress and prospects of the evolution of the information society, is well placed to be make a major contribution to the future GDC.

Furthermore, in relation to the SDG 17, the CSTD has suggested that the international community must assist developing countries by pooling its knowledge and technological know-how to promote the achievement of the SDGs. Within the UN system, the UN interagency task team on STI for the SDGs (IATT) serves as a crucial collaboration hub to enhance synergy and efficiency, in particular to enhance capacity for developing countries on STI policy. Capacity building should be supplemented by support for technology transfer and the creation of financial mechanisms to support developing countries to effectively harness STI to achieve the SDGs. These will be critical to help developing countries face the multiple challenges and regain progress in moving towards the Agenda 2030 and the SDGs.

**2. Three key areas where sustainable, resilient and innovative solutions for achieving the SDGs are being effectively delivered, especially related to the cluster of SDGs under review in 2024, considering the three dimensions of sustainable development and the interlinkages across the Goals and targets.**

With respect to international partnerships, there are good practice examples of effective international collaboration. The Consultative Group on International Agricultural Research (CGIAR) represents a longstanding experience of global partnership focusing on research related to food security. The CGIAR works with more than 3,000 partners in nearly 90 countries around the world and operates globally through its 15 research centres, consulting with a large number of stakeholders to develop priorities and

the development rationale. In 2019, the CGIAR System Council approved the concept of a unified and integrated approach to adapt to the changing global conditions and make the CGIAR system more relevant. Research in agriculture, land and water has become much more interconnected than before, and the fragmented nature of its governance and institutions was recognized as a limiting factor. Therefore, the new approach moved the CGIAR toward a unified governance, an integrated operational structure, and pooled funds to consistently deliver best practices and effectively scale research solutions to counterbalance the increasing interconnectedness of food security issues.

A second area where STI solutions are being successfully applied is harnessing data and data analytics to combat climate change, improve food security and strengthen disaster risk management. Data-driven innovations are becoming more common with the development of frontier technologies providing superior data storage, management and exploitation capabilities, such as artificial intelligence, sensors and the internet of things. This will be further enhanced in coming years with the expected development of quantum computing. Data-driven innovations are instrumental in supporting the transition towards a circular economy and decarbonization, by utilizing digital technologies across various stages of the product life cycle. Data-driven innovations can also mitigate climate change risks by providing insights and solutions for effective environmental management. Data-driven innovations hold enormous potential to transform agriculture, creating a more sustainable and equitable food system that could help end hunger and improve nutrition worldwide. Data analytics can optimize the use of water, fertilizers, and pesticides, increasing yields while reducing the environmental impact. For instance, predictive models based on weather data can guide farmers on the best times to plant and harvest, minimizing crop losses.

Capacity building for developing countries on STI policy has been highlighted by many developing countries as an area of need. Within the UN system, the UN interagency task team on STI for the SDGs (IATT) serves as a crucial collaboration hub to enhance synergy and efficiency, in particular to enhance capacity-building initiatives. One of the significant undertakings is the work stream 6 on capacity building: it designs and delivers training courses and workshops on STI Policy for SDGs, including a global repository of training materials, guidelines and case studies for policy implementation, particularly for developing countries.

**3. Three examples of specific actions, policies and measures that are most urgently needed to effectively deliver sustainable, resilient and innovative solutions to eradicate poverty and reinforce the 2030 Agenda, building on interlinkages and transformative pathways for achieving the SDGs.**

The formulation of the international STI agenda and the evolution of the global innovation system have been historically skewed towards the perspective of developed countries. This is due to their superior technological capabilities and the capacity to manage extensive networks, which reflect a cumulative and path dependence process that has led to strong asymmetries in resources and power. A shift towards a more inclusive and participatory approach requires stakeholder engagement and practical support measures to create a collaborative setting facilitating exchanges of knowledge among different actors and recognizing the needs of less well-endowed countries. There are notable international frameworks that aim to fill this gap but they remain relatively small compared to what is needed.

The digital divides are being compounded by a data divide across countries. While a majority of the global population now has access to the Internet, there are still millions of people who lack connectivity, particularly in marginalized and underserved communities. Internet access and the necessary connectivity devices can be prohibitively expensive for many individuals and communities, particularly in low-income areas. This lack of access creates disparities in opportunities and hinders the realization of the full benefits of the data economy.

The increasing importance of data in the global economy has also accentuated the need for effective national and international data governance frameworks. Establishing a global data governance framework would facilitate worldwide data-sharing, and assist in the creation of public goods that could tackle substantial global developmental challenges, such as poverty, health, hunger, and climate change. The governance mechanism would also need to be inclusive. Developing countries, and especially the LDCs, are often poorly represented in present conversations around global data governance.

#### **4. Follow-up actions and measures being undertaken by your intergovernmental / expert body to support implementation of the Political Declaration of the SDG Summit.**

The work of the CSTD covers specific issues related to science and technology and their implications for development. It therefore contributes to advancing the understanding of science and technology policies, particularly for developing countries, as well as to the formulation of recommendations and guidelines on science and technology matters within the United Nations system. Over the years, the CSTD has contributed to facilitating global cooperation in science and technology by acting as a forum to discuss policy issues raised by rapid technological change. The CSTD favors the sharing of best practices and lessons learned, the foresight of critical STI trends in key sectors of the economy and society, strategic planning in STI, and draws attention to new and emerging technologies.

The CSTD also provides annual follow-up to the implementation of the World Summit on the Information Society (WSIS). In 2025, there will be a review of WSIS+20.

Each year the CSTD provides in-depth analysis and proposes recommendations on two priority themes defined for the annual meeting with the aim of leveraging STI for sustainable development. They are generally related to specific SDGs and critical aspects of sustainable development. The priority themes discussed in the past five sessions of the include the following:

Twenty-sixth session (27 - 31 March 2023) “Technology and innovation for cleaner and more productive and competitive production” and “Ensuring safe water and sanitation for all: a solution by science, technology and innovation”.

Twenty-fifth session (28 March - 1 April 2022) “Industry 4.0 for inclusive development” and “Science, technology and innovation for sustainable urban development in a post-pandemic world”.

Twenty-fourth session (17 - 21 May 2021) “Using science, technology and innovation to close the gap on Sustainable Development Goal 3, on good health and well-being” and “Harnessing blockchain for sustainable development: prospects and challenges”.

Twenty-third session (10 - 12 June 2020) “Harnessing rapid technological change for inclusive and sustainable development” and “Exploring space technologies for sustainable development and the benefits of international research collaboration in this context”.

Twenty-second session (13 - 17 May 2019) “The impact of rapid technological change on sustainable development” and “The role of science, technology and innovation in building resilient communities, including through the contribution of citizen science”.

## **5. Recommendations and key messages for inclusion into the Ministerial Declaration of the 2024 HLPF.**

The CSTD proposes the following key messages for inclusion in the Ministerial Declaration of the 2024 HLPF.

The immediacy of the climate change crisis affords us limited time. Data, when properly used, can guide us to understand, monitor, and predict climate patterns, energy consumption, greenhouse gas emissions, and a plethora of other factors vital to combating climate change. Therefore, a more robust and effective utilization of data is integral in the fight against global warming. Meanwhile, as we are racing against time in implementing the 2030 Agenda, it becomes imperative to put in place robust policies and regulatory frameworks that ensure data governance which is conducive to maximize the data value while ensuring an inclusive and equitable distribution of gains from data. Such measures could include enhancing data literacy, strengthening domestic capacities, including quality data infrastructures, for data collection, processing, analysis and management, and establishing fair data sharing agreements at the international level. These initiatives should aim to create an environment where data flows benefit all parties involved and contribute genuinely to sustainable development. This requires a concerted effort from governments, international organizations, the private sector, academia, technical communities, and the civil society, acknowledging the significance of data in the current era and its potential role in shaping the future of sustainable development.

Science, technology, and innovation offer transformative solutions that can accelerate progress towards an inclusive, sustainable, and resilient world. Yet the opportunities and benefits brought by technological advancement are not distributed equally, with most of them being captured by developed countries, as reflected by the significant concentration of knowledge creation in terms of patents and scientific publications. The growing technological complexity, the fast pace of technological change and the massive impact of recent waves of innovations call for a collaborative approach to STI; business as usual will not close but widen inequalities, making it more difficult to catch up for latecomers. What is urgently needed is to enhance international solidarity and cooperation, revitalize global partnerships, and give renewed impetus to open, inclusive and equitable collaboration mechanisms.