Commission on Science and Technology for Development

Twenty-eighth session

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Summary of the discussions[1]

Prepared by the UNCTAD Secretariat

[1] This summary, unedited and unformatted, summarizes the discussions at the 28th annual session. In English only, it does not necessarily reflect the views of the CSTD secretariat served by the UNCTAD secretariat, or the member States of the Commission on Science and Technology for Development.

1. At its 28th session, the Commission on Science and Technology for Development (CSTD) discussed the role of science, technology, and innovation in advancing sustainable, inclusive, science-and evidence-based solutions for the 2030 Agenda for Sustainable Development and its Sustainable Development Goals for leaving no one behind and reviewed the progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society (WSIS) at the regional and international levels, in particular from the perspective of the twenty year anniversary of the WSIS. In addition, it considered two priority themes, a) Diversifying economies in a world of accelerated digitalization; and b) technology foresight and technology assessment for sustainable development. The session also discussed the technical cooperation activities undertaken in response to the outcomes of the CSTD.

2. The annual session began with opening remarks by the Secretary-General of UNCTAD. She reflected on the extraordinary pace of technological change over the past three decades, observing the layers of divides, particularly in areas such as artificial intelligence, data, digital infrastructure, and energy access that threatens to undermine the sustainable development goals (SDGs). Against this backdrop, she highlighted the Pact for the Future, which devotes a full chapter to science, technology, innovation (STI), and digital cooperation, underscoring the critical role STI must play in shaping a more inclusive and equitable future. She welcomed the establishment of a multistakeholder working group on data governance at the CSTD to support SDGs as mandated by the Global Digital Compact (GDC).

3. In her address, the Secretary General of the International Telecommunication Union (ITU) noted the growing weight of the digital economy, now valued at $6 trillion and expanding at more than twice the pace of the traditional economy. She cautioned that profound digital inequalities persist with 2.6 billion people remaining offline, and access to digital infrastructure and investment continuing to be uneven, particularly across low-income countries and in regions such as Africa. She saw the development of international standards as critical to ensuring that digital technologies are safe, interoperable, and trustworthy, while emphasizing the value of inclusive, multistakeholder approaches, such as those promoted by the WSIS process.

4. The President of ECOSOC emphasized the increasing relevance of the CSTD's work in an era defined by rapid technological change. Highlighting the critical role of science, technology, and innovation (STI) in addressing global challenges such as climate change, health crises, and food insecurity, he noted that many developing countries still face significant barriers, including limited access to emerging technologies like artificial intelligence and inadequate digital infrastructure. Hence, he announced that he would hold a special ECOSOC meeting on 6 May focused on AI's potential to accelerate sustainable development in the Global South, with particular emphasis on investment, capacity-building, and international cooperation. He commended the establishment of a multistakeholder working group at the CSTD in accordance with the GDC to develop principles for data governance and pointed to the relevance of the 28th annual session of the CSTD in informing the upcoming WSIS+20 review at the General Assembly.

A. Ministerial Segment

5. During the ministerial segment, the United Nations Under-Secretary General for Policy discussed the Pact of Future and its STI aspects and underlined that STI benefits for addressing global challenges such as food security, climate change, and health are not automatically or equitably distributed, and its risks must be actively managed. He identified three key areas for collective progress: investing in human and institutional capacity, especially in developing countries; promoting open science and open digital tools as essential public goods; and transforming the UN system itself to meet 21st-century challenges through enhanced expertise in data, foresight, and innovation, as outlined in the Secretary-General's UN 2.0 vision. He urged CSTD to help steer global efforts toward equity, cooperation, and inclusion, ensuring that STI is used effectively in the service of people and the planet.

6. A Co-Chair of the 2025 UN Multistakeholder Forum on STI for the SDGs (STI Forum 2025) commended that the agenda of the CSTD's 28th session is highly relevant in addressing current challenges in the field of science, technology, and innovation, and emphasized CSTD's important role in facilitating access to expertise and best practices for countries around the world. She encouraged participants to further engage with these topics at the upcoming STI Forum 2025 on 7–8 May.

7. In presenting the UNCTAD's Technology and Innovation Report 2025, the Secretary-General of UNCTAD spoke of the transformative potential of AI for global development as AI is projected to become a $4.8 trillion industry by 2033. However, its benefits remain concentrated in a few countries and major technology companies. Many developing countries face significant gaps in infrastructure, data, and skills which are three key leverage points for inclusive AI development. This creates a risk that the digital divide will evolve into an AI divide, deepening global inequalities. She echoed five urgent actions mentioned in the report: investing in AI readiness, ensuring global governance that includes all voices, overcoming AI monopolies, holding the technology industry accountable, and strengthening international cooperation to make AI a driver of inclusive growth.

8. Over a dozen ministerial participants shared their national practices in national STI legislation and strategies and deploying STI solutions to address development challenges and promote sustainability, inclusivity, and resilience. For example, Burkina Faso has given focus on digital empowerment for women, which led to the success of the "Women and the Digital Sector" program that has enhanced digital skills among women in both urban and rural areas, leading to increased female entrepreneurship, higher enrolment in science, technology, engineering and mathematics (STEM), and more incubators supporting women-led projects. In Peru, its national STI strategy is guided by three principles: sustainability, inclusivity, and evidence-based policymaking. On inclusivity, Peru has made targeted efforts to extend the benefits of STI to rural areas, vulnerable populations, women entrepreneurs, and young innovators. As a result, the Pro Innovate initiative has supported over 7,500 innovation projects, largely involving micro, small, and medium-sized enterprises (MSMEs). Notably, 40% of these projects are led by women. Success stories include energy bars made from Andean crops, augmented reality tools for inclusive tourism, and low-emission technologies in the agri-food sector. Cuba has paid attention to inter- and transdisciplinary models, better integration of scientific practices into public policies, and improved communication with the public. In Iran, the 2011 Law on Support for Knowledge-based Institutions has led to the growth of over 10,000 knowledge-based firms, contributing significantly to job creation and technological advancements. Women have played a critical role in these advancements, with over 50% of university students in basic sciences and

engineering being women. Iran has worked to improve digital literacy, particularly in rural areas, with over 90% of villages now having access to high-speed internet. To address low participation of females in STEM fields in Guatemala the government is promoting initiatives such as scholarships, mentorship programs, funding opportunities prioritizing young women researchers, and support for women entrepreneurs through digital literacy and AI tools. E-learning projects and technology-based training are also provided to upskill women and youth. The National Research Fund supports increased participation from rural and indigenous women in research. Oman has prioritized education, research, and innovation to build a competitive, knowledge-based economy. The implementation of key policies supporting inclusive education, academic freedom, and innovation has led to notable progress, including a 36% increase in academic programs related to information systems and technology, and Oman's ranking as second globally in the percentage of graduates in science and engineering. The Philippine government has been enforcing programs that aim to strengthen rural communities and support local MSMEs through science-based interventions. Scholarships are offered for STEM education, and efforts are being made to upskill the workforce in areas like data science and AI to prepare for an evolving digital economy. Tanzania has benefited from promoting STI in sectors like education, through the expansion of e-learning platforms and digital skills development; climate resilience, through technologies that support environmental monitoring and inform decision-making; health, through medical research to combat diseases such as malaria; and agriculture, by adoption of smart agriculture powered by big data that enhances productivity and food security. In the United States, the government is advancing development in the digital economy by supporting emerging technologies and fostering collaboration between the public and private sectors. An AI Action Plan has been recently initiated, which fosters innovation while safeguarding economic competitiveness, national security, and individual well-being. Ghana has developed a STI roadmap for the attainment of the SDGs, particularly in the field of heath, agriculture, digital innovation and industry. The employment of digital platforms, mobile health applications and drones to diagnose, treat patients and distribute medical products in remote areas reduces the need for long-distance travel and increases access to medical consultation. In the agriculture sector, digital platforms such as FarmerLine, SOQ and IFarm have been created to provide

vital information on weather forecasts, market prices, farming techniques and pest management strategies via mobile apps and SMS. Ghana has also implemented several innovation hubs, and technological incubators to the service of women entrepreneurs with access to training, mentorship and funding, as well as gender-responsive initiatives in education such as STEM girls' programs. Mozambique has set the goal to increase investment in R&D from the current 0.3% of GDP to at least 1%. It is implementing the Internet for All project. Russia launched its decade of Science and Technology in 2022 with three main objectives: attracting young people into R&D, involving scholars in finding solutions to pressing issues, and making science accessible. The country also organizes the Science Zero Plus Festival, which is an educational project that provides information on recent scientific discoveries. In Turkey's 2030 Industrial and Technology Strategy, high technology is one of the five key pillars that are intended to strengthen Turkey's global competitiveness. The Scientific and Technological Research Council of Turkey plays a pivotal role in fostering the technology-driven sustainable development in accordance with the country's 12th Development Plan by engaging in scientific research and the development of innovative solutions in the following domains: clean energy, climate change, mitigation, water and food security. Meanwhile KOSGEB provides funding to support SMEs as well as technology entrepreneurship.

9. It was pointed out that many developing countries still face significant barriers to access and benefit from emerging technologies. The value of international cooperation has been widely stressed by the participants. Enhancing international cooperation in technology transfer, capacity building technical assistance, and financial support were emphasized particularly by participants from developing countries and LDCs. CSTD was appreciated for its role in facilitating such cooperation. There was also a call on all stakeholders to support the UN Technology Bank for LDCs.

B. Review of WSIS, in particular WSIS+20 review

10. Pursuant to ECOSOC resolution E/RES/2023/3, the 28th CSTD held a full-day substantive discussion on the 20 years' progress made in the implementation of the outcomes of the WSIS (WSIS+20 review). Among the participants were more than a dozen ministerial level delegates, ambassadors and heads or deputy heads of international organizations.

11. The session began with a briefing from a Co-Facilitator of the intergovernmental consultations on the modalities for the overall WSIS+20 review by the General Assembly participated. He informed the participants that the General Assembly adopted the resolution on the modalities on 25th March 2025, which reaffirms Member States' commitment to an inclusive and transparent multi-stakeholder process. He emphasized the importance of engagement with stakeholders in Geneva and acknowledged the enduring contributions of the Geneva-based ecosystem to the WSIS process.

12. The secretariat presented briefly the United Nations Secretary-General's annual report on WSIS implementation, and in more detail the secretariat's draft *Report on the progress made in the implementation of the outcomes of the WSIS during the past 20 years* as background paper for the WSIS+20 discussions, indicating that the latter report would be finalized after the annual session.

13. The annual report stresses two aspects relating to the WSIS: a) affordable and meaningful connectivity; and b) digital and environmental governance. In recent years, increasing attention is being given to affordable and meaningful connectivity – connectivity that allows users not only to have occasional access to the Internet, but also to benefit from reliable, high-quality access that enables them to improve their lives. Meanwhile the need for robust digital governance has grown significantly, particularly in response to the rapid advancement of artificial intelligence (AI) and its growing impact on daily life. Furthermore, the international community is increasingly recognizing the interlinkages between digital development and environmental sustainability. As noted by UNCTAD in its Digital Economy Report 2024: Shaping an Environmentally Sustainable and Inclusive Digital Future, greater attention must be paid to digital and environmental governance—particularly in promoting sustainable consumption and production that aims to decouple economic growth from environmental degradation. The report called for closing digital divides and ensuring inclusive access; strengthening digital governance frameworks; and aligning even more closely digital development with the Sustainable Development Goals. These could be taken up at the General Assembly's review on WSIS+20.

14. The report of the secretariat on WSIS+20 incorporated inputs from all stakeholders through different means of consultations that the secretariat undertook between September 2023 and February 2025, most of which were

held in collaboration with the International Telecommunications Union (ITU), the United Nations Education, Science and Culture Organization (UNESCO), the United Nations Development Programme (UNDP) and the United Nations Regional Commissions in West Asia, Asia-Pacific, Africa and Latin America. The financial contribution from the United Kingdom Government was gratefully acknowledged. The report provides an assessment of the changes that have taken place since WSIS, particularly since WSIS+10, in critical aspects of the Information Society; and a review of stakeholders' perceptions of both the successes and ongoing challenges since WSIS as well as future priorities for the WSIS. It also considers the outcomes of the Summit of the Future held in September 2024, in particular the Global Digital Compact (GDC). The report highlighted that despite rapid technological change since WSIS, the uneven distribution of digital benefits persists within and between countries, particularly concerning least developed countries and vulnerable groups within countries. It identified ongoing challenges related to digital security, privacy, and growing risks of inequality in the digital economy, including issues such as misinformation, affordability, and digital skill gaps. It proposed strategic priorities for the future, including closing the digital divide, strengthening trust and governance frameworks, especially for AI, and aligning WSIS efforts with the SDGs and the GDC. The need to adapt WSIS action lines to reflect current digital realities was emphasized, along with the importance of enhanced international cooperation.

15. The synthetic but comprehensive report of the secretariat was appreciated by the participants. It was underscored that the breadth and depth of stakeholder contributions to this report reflect the enduring relevance of the WSIS vision even in the face of the growing complexity of the digital era.

16. With common recognition that the WSIS vision of a people-centered, inclusive and development-oriented information society remains valid and relevant to today's world, discussions centered around five themes related to the 20-year review of the implementation of the WSIS outcomes.

17. On the first theme of development of information technology since the WSIS, participants recognized the unprecedented pace and scale of technological innovation and the evolution of Information and Communication Technologies (ICTs) since the summit, particularly with the recent expansion of AI. They recognized the transformative power of digital technologies in shaping inclusive, resilient national development and

economic growth, particularly for Micro, Small and Medium-sized Enterprises (MSMEs). The remarkable increase in the use of mobile phones and broadband played a vital role in advancing connectivity, digital skills, and inclusivity. Some regions have witnessed rapid digital development. Europe's Digital Decade 2030 has been instrumental in enhancing connectivity, promoting innovation, and empowering citizens and businesses across Europe. Having emerged as a hub of digital innovation, the Asia-Pacific region has made remarkable strides in digital connectivity and innovation, driven by the expansion of online ecosystems and the development of cutting-edge applications. Digital solutions are increasingly driving productivity improvements and supporting economic growth while contributing to climate change mitigation and adaptation, as exemplified in a range of sectors, including infrastructure, agriculture, biodiversity conservation and disaster risk reduction.

18. Meanwhile, participants shared the view that digital divides remain big within and among countries, with a striking figure of 2.6 billion remaining offline to this day, especially for people in vulnerable situations and in least developed countries (LDCs). It was stressed that in today's digitalized world, reduced connectivity means, inter alia, a lack of education and employment opportunities, hindering access to social services and limiting economic participation. It was pointed out that emerging technologies pose significant risks in various aspects, including profit-oriented education, the negative impact on workers, the virtualization of human relations, the spread of deep fakes and misinformation, and serious privacy violations. Participants hence emphasized the need to address cybersecurity, data privacy, ethics, misinformation, disinformation and lack of accountability.

19. In discussing the second theme concerning the implementation of WSIS outcomes, participants appreciated the success that WSIS implementation has achieved in many aspects, while reaffirming the centrality of digital inclusion, economic development, sustainable transformation, and human rights.

20. It is generally shared among the participants that WSIS has catalyzed and shaped rapid digital transformation around the world and the success of the WSIS Framework centers on its multistakeholder approach. It was highlighted that the WSIS action lines are broad, technology neutral, and flexible enough to address new and emerging technology issues.

21. ITU, UNESCO and ESCAP provided an overview of respective organization's implementation of WSIS outcomes. ITU highlighted the transformation enabled by WSIS as manifested by the significant increase of Internet access from only 785 million people or 12.4% of the world's population in 2003 to some 5.5 billion people or 68% of the world's population in 2024. The dedication of UN agencies, Member States, and all other stakeholders enables WSIS to remain dynamic, action-oriented, agile and adaptable. Moreover, the United Nations Group on Information Society (UNGIS) keeps nearly 50 UN organizations working in concert and has developed a matrix linking WSIS Action Lines to GDC objectives to support coherent and impactful digital development. The ITU emphasized the value of the WSIS Stocktaking Database, which includes over 14,000 projects. UNESCO reiterated its role as leading facilitator of six WSIS action lines and its efforts to advance access to information and knowledge show tangible results. Since 2002, Access to Information laws have risen from 48 to 140, enhancing transparency and accountability. Its Internet Universality ROAM principles have supported over 40 countries in shaping rights-based, open, and inclusive digital policies. UNESCO has also expanded digital learning access through initiatives like the UNESCO Recommendation on Open Educational Resources, the Digital Transformation Collaborative, and the Global Skills Academy, in partnership with ITU and UNICEF. ESCAP has been enhancing regional cooperation through, for example, the implementation of Asia-Pacific Information Superhighway (APIS) Action Plan 2022–2026 to accelerate the implementation of World Summit on the Information Society (WSIS) action lines at both national and regional levels. The Broadband Commission for Sustainable Development was commended for having made a significant contribution to expanding global broadband access, narrowing the digital divide, and fostering both economic and educational opportunities worldwide. At national level, some countries shared their progress in benefiting from the WSIS implementation. In Burkina Faso, the liberalization of the telecommunications sector in 2006 has led to a competitive environment with diverse infrastructure and internet service providers, 27 million active mobile phone subscriptions in a country of 21 million people, and 18 million internet subscribers, reaching both young people and rural communities. In Tanzania, the country has installed national fibre optic cable backbone to connect 80 per cent of the district, while mobile broadband covers 88 per cent of the population coverage. By promoting digital inclusion, enhancing connectivity,

and empowering communities, the WSIS Action Lines and targets have helped Guatemala make important progress toward a people-centered, inclusive Information Society. Iran has made significant progress particularly in optical fiber network expansion, widespread implementation of mobile broadband networks in rural and urban areas and advancement of e-services in healthcare, trade, education, agriculture, and science. Some countries also outlined policies and investments to support MSMEs, promote innovation, and embed ICTs across key sectors. Some participants called for prioritizing gender equality, environmental governance, and regional cooperation. Several delegates stressed that digital transformation must uphold human rights, with a particular focus on privacy, freedom of expression, non-discrimination, and ethical technology governance. A concern was raised that the international mechanisms and approaches designed to provide financial and technological assistance had not been effectively implemented as indicated in paragraphs 61 and 66 of the Declaration of Principles.

22. In discussing the third theme of inclusiveness of the WSIS implementation, there is a broad agreement among participants that inclusiveness must remain a core pillar of WSIS implementation, particularly by advancing the participation of women, youth, and marginalized groups. Participants emphasized the need for inclusive international frameworks and policy development in developing countries. For example, the ITU's Connect 2030 Agenda has played a vital role in promoting digital inclusion, particularly in developing countries, by encouraging access to safe, affordable, and resilient digital infrastructure. Portugal has been offering the UN-Portugal Digital fellowship that was designed to support LDCs, landlocked developing countries and small island developing countries in benefitting from digital innovation. Meanwhile, some countries highlighted their efforts to promote inclusiveness. In Burkina Faso, public administration services were digitalized to bring the State closer to the citizen, enabling people in remote or insecure locations to access essential public services without taking costly and risky travel. In Peru the financing and support of the Pro Innovate program have invested 10 million USD to support more than 750 business, primarily MSMEs, in digitalizing their processes and improving their competitiveness. Some technical communities are also engaged in these efforts to promote universal access, including creating multilingual digital environments.

Several NGOs called for grassroots participation, gender-sensitive policies, and structural reforms to ensure digital transformation benefits all.

23. Many participants underscored the importance of addressing the gender divide, which was evidenced by ITU statistics that indicate women are 15% less likely than men to own mobile phones in low and middle-income countries, and that gender gap in Internet usage exceeds 25% in the least developed countries. The GSMA Mobile Gender Gap Report also confirms these divides have only marginally improved in the past decade. An analysis of the current WSIS framework identifies two fundamental limitations concerning the gender dimension of WSIS: a) the current approach to gender integration remains fragmented and inconsistent across action lines. Despite commitments, there is a lack of concrete accountability mechanisms and gender-specific targets within each action line. And b) without dedicated institutional attention to gender equality, women's specific digital challenges—from technology-facilitated gender-based violence to algorithmic bias and under-representation in tech leadership—receive insufficient focused attention. Recommendation was made that a dual approach to transform WSIS from gender-neutral to gender-transformative be implemented, i.e. a) to systematically mainstream gender across all existing action lines; and b) to establish a dedicated Gender Action Line as the SDG 5 and the GDC have done. Despite the structural weakness of WSIS in respect of gender, several participants showcased their countries' efforts towards inclusiveness. For example, Guatemala and Peru shared their respective initiatives to reduce the gender digital divide, including through Guatemala's Digital Community Centers for women, and Peru's Digital Strategy for Small and Medium-sized Enterprises which supports women-led businesses.

24. During the discussion of digital governance as the fourth theme, it was emphasized that governance frameworks should be designed to anticipate and guide developments in new technologies, ensuring they are safe, equitable, interoperable, rights-based, and aligned with global norms. Developing countries should be engaged in global digital governance discussions as they are particularly vulnerable to inequalities in digital access amid the rise of emerging technologies such as AI and big data. There was a call to establish a monitoring mechanism to assess ICTs' impact on sustainable development and human rights, and to address the evolving digital landscape and its global governance. Some practices were shared. The national coordination on

cybersecurity and data protection was seen as essential to create an enabling environment and foster a trustworthy and secure digital economy for business development. The Portuguese Charter of Human Rights in the Digital Age adopted in May 2021 establishes a pioneering legal framework to safeguard fundamental rights in digital contexts for all Portuguese citizens. In addition, the Charter of Rights and Principles in Digital Environments, signed last July by Portugal and the other Member States of the Community of Portuguese Language Countries reinforces a shared vision for a rights-based, inclusive digital future. Participants recognized the importance of addressing critical gaps in AI governance, given the enormous opportunities and parallel risks presented by this technology. There was a concern about the concentration of power over mainstream AI applications in the hands of a few companies. Participants urged implementation of the GDC, which emphasizes the need for a more inclusive and accessible digital environment built upon universal connectivity, the protection of digital rights, and the promotion of responsible innovation.

25. The participants have seen the Internet Governance Forum (IGF) as the primary multi-stakeholder platform for Internet governance. Some delegates called for strengthening the role of the Office of the High Commissioner for Human Rights (OHCHR). Participants called for enhanced international cooperation, with broad support for multistakeholder partnerships from governments, UN entities, technical and academic communities, civil society, and the private sector, for instance, through forums such as APEC or bilateral agreements that facilitate technology transfer and equitable access to the digital economy. Similarly, regional cooperation through initiatives such as the implementation of our Asia-Pacific Information Superhighway (APIS), can accelerate the implementation of the WSIS action lines at both national and regional levels. Several delegates emphasized the need for alignment and coherence among the UN processes of GDC and WSIS to help maximize the impact, and ensure the UN works effectively towards closing digital divides without duplication of effort or additional budget obligations. There was also a call for greater accountability and ethical governance frameworks, alongside support for voluntary, innovation-friendly models that respect national sovereignty and avoid overly centralized approaches. Meanwhile international cooperation and intra-UN cooperation were urged as any single country or organization is not able to tackle alone digital governance. The establishment

of the Working Group on Data Governance at CSTD was welcomed as a step toward advancing inclusive, rights-based digital cooperation.

26. During the discussion on the last theme of future priorities of the WSIS, it was underlined that the Pact of the Future urged for global cooperation in the STI field, including digital technologies and WSIS could play a crucial role in prioritizing digital inclusion, bridging technological gaps, and fostering trust. Strengthening WSIS's adaptability, visibility, and funding is imperative to ensuring its continued relevance and impact. Key WSIS mechanisms, such as the Internet Governance Forum and WSIS Forum must evolve to remain relevant and effective in the face of rapid technological advancements. Addressing critical gaps in AI governance to ensure responsible AI use and countering disinformation, data protection, digital infrastructure, gender equality, and environmental sustainability will be among key priorities. The multistakeholder governance of the WSIS process should be strengthened.

27. Some participants stressed the need for inclusive infrastructure and affordable access, including fiber optic backbone, data centers for local hosting of data and platforms, and an internet exchange point to optimize data traffic. Meanwhile some called for a dedicated gender action line and stronger gender mainstreaming across all WSIS action lines.

28. Several participants called for stronger coordination and alignment between WSIS and the GDC, noting that the GDC calls for building on the WSIS processes and forums. The Secretary-General's Envoy on Digital and Emerging Technologies informed the participants on how the progress in implementing the GDC provides insight into the important complementarity between the WSIS and GDC, and their architectures. The United Nations Office for Digital and Emerging Technologies (ODET) and ITU are co-chairing a new Working Group on Digital Technologies, which has brought together 35 agencies spanning all SDGs. They have jointly prepared an ambitious workplan which offers monitoring and support for the implementation of GDC. The vice-chairs of the new working group -- which include the Office of the High Commissioner for Human Rights, UNCTAD, UNDP, UNESCO, UNIDO, UNU, DESA and a regional economic commission – are driving forward those tasks assigned to the UN-system by the GDC, across all 5 objectives of the Compact. ODET, UNCTAD and UNIDO have jointly developed a concept for the GDC implementation map existing as an online platform which can track and visualize the efforts of

Member States, stakeholders and UN entities who bring their energy and resources to the global effort for digital cooperation.

29. There was exploration on how to align WSIS Action Lines with contemporary digital realities, for example, through expanding their scope to reflect emerging technologies and their societal impact. One proposal was to integrate the commitments of GDC into the WSIS action lines, i.e. a joint WSIS-GDC implementation roadmap that integrates GDC commitments within WSIS implementation work to ensure coordinated action on connectivity, human rights, and emerging technologies. This could build upon UNGIS' current WSIS-GDC-SDGs mapping matrix. Another proposal was to extend the role of UNGIS to the implementation of the GDC to improve global coordination, enhance coherence and avoid duplication. The UNGIS was also proposed to expand by adding ODET and other relevant UN bodies and reinforcing multistakeholder engagement with it, serving as a holistic steward to digital cooperation and improving coordination across the UN system.

30. Several delegates suggest CSTD continue annual reviews of the implementation of the WSIS outcomes and it should be strengthened to include review of the progress in implementation of the GDC, which would help ensure that WSIS remains aligned with the latest technological developments and global priorities. It should also serve as the intergovernmental forum for key digital policy decisions, including on data governance and artificial intelligence, while establishing mechanisms to close the digital divide and strengthen international digital cooperation.

31. Several countries and civil society groups expressed their support for renewing the mandate and strengthening the IGF through sustainable funding.

32. One delegation stated that the WSIS+20 Review, as an independent framework, should focus on the review of the implementation of WSIS outcomes, not the connection to other processes.

33. The participants agreed that the outcomes of the WSIS+20 review at the CSTD, along with the secretariat's report will be submitted, via the Economic and Social Council, to the General Assembly as inputs to the latter's overall review of the implementation of the outcomes of the WSIS in December 2025.

C. Priority theme on "Diversifying economies in a world of accelerated digitalization"

34. The secretariat presented the United Nations Secretary-General Report (E/CN.16/2025/2) on "Diversifying economies in a world of accelerated digitalization". The report explores strategies for economic diversification in the context of rapid digitalization, focusing on how policymakers in developing countries can design responsive policies to harness the benefits of frontier digital technologies. The presentation highlighted the need of a shift from export-oriented industrialization to technology-driven transformation, pinpointing the opportunities and challenges faced by developing countries. It also emphasized the need to rethink industrial and innovation policies to foster structural transformation and industrial upgrading. Additionally, it discussed the importance of assessing countries preparedness to leverage digitalization for economic diversification, focusing on infrastructure, data, and skills. Finally, the presenter underscored the important role of digital public infrastructure, open innovation, capacity-building and international governance in enabling developing countries to keep pace with technological advancements and to diversify industries with higher value-added production that benefits all sectors of society.

35. During the discussions, participants, including ministers, affirmed that while digitalization presents significant opportunities for economic diversification, it also poses notable challenges, particularly for developing countries. These challenges are primarily related to inadequate digital infrastructure and connectivity, the digital divide, limited access to data and financing, and a shortage of skilled professionals capable of leveraging advanced technologies such as AI and data science. The digital divide disproportionately affects women, youth, and rural communities, hindering the potential for inclusive growth. Key strategies discussed include the importance of building resilient digital infrastructure and promoting inclusive innovation that fosters equitable economic opportunities for all. Addressing digital skills gaps, particularly through capacity-building programs in underserved areas, is crucial for enabling developing countries to participate in and benefit from digitalization and the knowledge economy. The discussions also highlighted the role of international cooperation in building inclusive digital ecosystems and the need for governance frameworks to ensure that data is used responsibly and that digitalization benefits society at

large. Fostering innovation through open access to technology and multistakeholder collaboration is essential to overcome infrastructural and capacity gaps and counterbalance market concentration. For this to be successful, multilateral cooperation, stable funding, and the development of long-term, sustainable STI policies are crucial to ensure that no country is left behind in the digital age. The CSTD plays a key role in fostering global cooperation by establishing international networks and exchange initiatives, facilitating discussions and programs on pressing STI issues, and supporting a continuous and flexible growth of partnerships across stakeholders.

36. Some examples were shared during the discussion. In East Africa, intersections between agriculture and fintech allow mobile money help farmers access payments, loans, and insurance. In agriculture and AI, data platforms are creating new business models. In healthcare, AI-driven diagnostics, telemedicine, and mobile health apps are improving affordable healthcare and expanding microinsurance. The nutrition health sector is also using data to create targeted products like supplements. Green economy innovations, including green transportation, e-mobility, and smart city solutions (e.g., Kigali Smart City, Johannes Smart Grid), are integrating AI, IoT, and electric mobility, opening new urban tech markets. In Peru, transitioning industries toward higher value-added, sustainable sectors involves strengthening three interconnected pillars: accessible digital infrastructure, strategic data use, and the development of relevant digital skills. The expansion of digital infrastructure, especially in rural areas, is spearheaded by the Ministry of Transport and Communications. The Ministry of Production focuses on converting connectivity into productive value by supporting MSMEs (micro, small and medium enterprises) through initiatives like ProInnóvate, which has allocated over $10 million to help businesses adopting technologies, and digitizing processes such as certifications. The "MYPE Digital" program provides nationwide guidance on digital transformation. Developing digital capacities is supported through programs like the National "Tu Empresa" Program and the network of Innovation Centers. In Cuba, discussions about digital transformation, AI, and the digital economy led to the creation of the Union of Cuban Computer Scientists and the National Innovation Council in 2021. These initiatives advise the President on decisions related to innovation in government, the economy, and society. Cuba has also developed a Digital Transformation Policy and an AI Usage

Policy, with researchers working on AI applications in sectors such as tourism, communications, construction, and sports. Cuba has also implemented digital government initiatives, such as an online platform for citizens to interact with government services. Thanks to the country's strong investment in biotechnology, Cuba made important achievements including local vaccine production, a therapeutic vaccine for advanced lung cancer, and a treatment that reduces amputations in diabetic foot ulcer patients. Guatemala has listed infrastructure and connectivity as top priorities, particularly since many areas in Guatemala lack electricity. Guatemala is also using AI for real-time malnutrition monitoring, empowering small farmers, and prioritizing indigenous women in rural areas. The Philippines has established the Computing and Archiving Research Environment (COARE), a publicly managed supercomputing facility that supports the science community with high-performance computing, science cloud, and data archiving services. The AI R&D Framework of the Philippines focuses on four pillars: national infrastructure, talent development, research and data, and policy and stakeholder engagement. Initiatives to provide AI as a service are aimed at democratizing access to AI resources. Initiatives like AI PINAS and SPARTA have upskilled over 49,000 individuals in data science and AI, with the government investing $23 million in AI R&D from 2018 to 2024. The Philippine Development Plan 2023-2028 focuses on innovation and technology adoption, while the Philippine Innovation Act promotes innovation as central to sustainable growth. Digital transformation in Iran is viewed as a structural shift, with a focus on reducing oil dependence and Iran is aligning its education and workforce training systems to promote emerging digital skills. As part of the measures to diversify its economy, Paraguay has implemented reforms to strengthen institutions and improve the business environment through digital technology. Before the Covid19 pandemic, it took 60 days to start a company, now it can be done in a single day. All processes were re-engineered for transparency, and digital signatures are now part of the Zero Paper policy. The government is working on a digital portal to streamline the documents required to start a company. Efforts have also been made to use technological tools to enhance government efficiency, with e-government initiatives being promoted. China is working together with other countries and has proposed plans for AI development and building capacity in these countries. UNIDO is making efforts to drive AI adoption, innovation, and digital transformation through initiatives like AI4Industry,

Innovation4Industry, and Digital4Industry. These programs aim to support industrial development and sustainable economic growth. UNIDO also has a solutions platform, which unites governments, businesses, youth, and academia to collaborate on scalable solutions for sustainable industrialization, resilient infrastructure, and the achievement of SDGs. ITU is implementing initiatives which include expanding broadband access to developing regions, promoting digital skills and literacy and supporting the AI development through the AI for Good platform. It is advancing these efforts through strategic collaboration with UN agencies including the CSTD, member States and other stakeholders.

D. Priority theme on "Technology foresight and technology assessment for sustainable development"

37. The secretariat presented the Report of the United Nations Secretary-General on Technology Foresight and Technology Assessment for Sustainable Development. The report examines the use of these two tools for promoting sustainable development across countries at different levels of development. Despite distinctions between them, they are complementary approaches that can both be used by countries to improve their capacity for strategic planning, gathering strategic intelligence and promoting anticipatory governance of emerging technologies. This supports a forward-looking approach to STI policy and other important areas of development policy. However, many countries face persistent challenges in using these tools effectively, particularly developing countries, including lack of capacity in the public sector, weak research-policy interfaces, scarcity of financial resources, lack of stakeholder familiarity, weak stakeholder engagement, weak uptake of results by top decision makers and policymakers, issues of data and information access and a fragmented sectoral approach. There is a need for greater international support for developing countries to build national capacity for using these tools. In this regard, creating a global support mechanism to provide technical assistance, funding and knowledge-sharing for countries developing TF and TA capabilities were recommended.

38. During the discussions, it is generally recognized that TA and TF are vital for fostering anticipatory governance that provide early warnings on issues ranging from water scarcity to digital inclusion and help build the necessary capacity to manage technological change effectively, thus enabling

policymakers to leverage the benefits of emerging technologies while mitigating potential risks through adaptive governance. Governments hold a dual responsibility to stimulate technological innovation and to simultaneously anticipate and mitigate associated risks, upholding public values such as sustainability, equity and accountability.

39. Emphasis was made that the essence of foresight is not to predict a fixed future but to explore multiple plausible scenarios through methods such as horizon scanning, futures wheels, and scenario building. Meanwhile, the importance of addressing the often-overlooked social, legal, ethical and ecological implications of technologies was highlighted. A robust TA ecosystem includes five foundational capacities: i) developing TA expertise through education and training; ii) raising public and political awareness; iii) establishing long-term political vision and funding; iv) embedding TA into governance structures; and v) integrating TA and TF into broader STI policy.

40. Some examples in undertaking technology foresight and assessment were shared. In the European Union, the European Commission employs technology foresight (TF) to analyze neurotechnology's impact on education and employment, as well as pandemic preparedness efforts through expert consultation processes. TF is used to support proactive European policymaking by helping guide funding allocations, shaping scientific agendas, supporting strategic intelligence and providing policy implications for policymakers. Through examining the broader implications of emerging and disruptive technologies (for example, the convergence of AI and neurotechnology), TF enables context-sensitive and inclusive policy recommendations. The European Commission does not see TF as predicting the future but rather as exploring uncertainty in a volatile, uncertain, complex, and ambiguous (VUCA) world to identify possible, probable and desirable futures. It continues to champion futures literacy and makes available open-access resources to encourage foresight adoption across institutions and countries.

41. In Africa, there is increasing recognition of technology assessment (TA) and technology foresight (TF) as critical instruments for STI policymaking. This trend may be linked to the continent's strategic orientation towards long-term development frameworks, including the African Union's Agenda 2063 and national development visions of countries. The potential to build a

continental platform on TA and TF based on the African Union's STI Strategy for Africa 2034 is emerging.

42. The United Kingdom has used TA and foresight to promote sustainable outcomes, for instance, with the Internet of Things. Since 2014, Iran has implemented a national STI foresight program to identify and prioritize key technologies for addressing critical challenges such as water scarcity, energy imbalances and smart city development. In Cuba, the Ministry of Science, Technology and the Environment oversees the national science and technology system and technology assessment, supported by other ministries including those of Agriculture, Communications, Health, Construction, Industry and Energy. Technology assessments are conducted through a participatory process involving academics, researchers, experts and professionals from various sectors and levels of governance. Peru is making efforts in building capacity for technology foresight in cooperation with the National Center for Strategic Planning and sectoral bodies such as the Technological Production Institute. Oman uses TF to analyze future prospects and TA to study the impact of remote education tools aimed at promoting access to quality education.

43. Some participants stressed that effective technology foresight and assessment require accurate data, financial resources and expertise. Several participants advocated institutionalizing TF and TA at national level, which could include establishing foresight and assessment agencies or other mechanisms, such as scientific advisory roles, parliamentary futures commissions, and cross-ministerial units, equipped with decision-making authority and sustainable funding.

44. The gender dimension of both TF and TA was raised. It was argued that gender-responsive methodologies not only enhance the analytical rigor of TA and TF but also generate more effective and equitable outcomes. Integrating a gender lens is vital for ensuring that the benefits of technological advancements are distributed equitably across all segments of society. Proposed measures include establishing gender-balanced assessment teams, mandating gender impact analyses, developing standardized methods for collecting gender-disaggregated data, and building local capacity through tailored training programs.

45. Science anticipation, a complementary practice to foresight, was also brought up. It is implemented through a three-step methodology: (i)

identifying emerging research and scientific breakthroughs; (ii) accelerating dialogue among scientists, policymakers, and industry stakeholders to co-design initiatives; and (iii) translating this knowledge into concrete policy and operational actions. It was underscored that failing to anticipate technological change would incur high costs, hence the need for evidence-based and forward-looking governance to navigate a volatile and fast-evolving scientific landscape.

46. Many participants highlighted the shared challenges among developing countries, which include the need to enhance technical expertise, strengthen stakeholder engagement, allocate sufficient resources, establish better inter-agency cooperation and integrate technology foresight and assessment results into policymaking processes. Interest was expressed to learn from others with expertise in this area, including UN agencies. International organizations including UNCTAD were called upon to provide target support and help build capacity in developing countries and LDCs, for instance, through a dedicated initiative on technology foresight and technology assessment. This initiative should pool resources, share methodologies and provide tailored training on tools like scenario planning and horizon scanning. Developing countries could also consider participating in networks such as the European Parliamentary TA Network and Global TA Network.

E. Report on technical cooperation activities in the STI field

47. Under the item of report on technical cooperation activities in the STI field, three projects were presented: a) the lessons learned from the UNCTAD pilot project on technology assessment in Seychelles, South Africa and Zambia; b) the joint UNCTAD-Atlantic International Research Centre project on Harnessing space technological applications in sustainable urban development; and c) science, technology, and innovation parks: assessment and policy issues under the UNCTAD project on Science, Technology and Innovation Parks for sustainable development: building expertise in policy and practice in selected Asian and African countries. These projects were seen as examples of harnessing science and technology for the effective delivery of sustainable, resilient, and innovative solutions.

a) Lessons learned from the UNCTAD project on Technology Assessment

48. The UNCTAD Secretariat presented lessons learned from the UNCTAD pilot project on technology assessment (TA) conducted in South Africa, Zambia, and Seychelles. He explained that the project, launched in response to the resolutions of ECOSOC, and the UN General Assembly, aimed to introduce participatory TA to African countries, build national capacity, and develop a tailored methodology for use in developing country contexts.

49. Key outputs included a revised TA methodology, country-specific assessment reports and draft action plans, and foundational capacity-building. One lesson is that inclusive practices like focus groups and aligning assessments with national development goals proved beneficial. Another lesson is that TA is a complex, non-linear process requiring adaptive approaches and long-term investment. The time frame for completing an assessment can be hard to predict. The third lesson is that limited resources, changing political environments, and difficulties in stakeholder engagement, especially in reaching marginalized groups could pose serious challenges to complete the TA. The project highlighted the importance of context-specific adaptation of the methodology, particularly the governance structures established for the TA exercise. Also of high importance is the need for strong country ownership and high-level political support for the assessment.

50. A participant raised a question regarding the process used to select the specific technologies assessed in the project's beneficiary countries, for example the agrivoltaics technology assessment in Seychelles. In response, the secretariat explained that technology selection was led by the participating countries through a structured process outlined in the TA methodology. Each pilot country—South Africa, Zambia and Seychelles—formed both a steering committee and an expert group. These national bodies were responsible for identifying and agreeing upon the technology to be assessed. While UNCTAD provided guidance and advisory support, the final decision rested with national stakeholders.

b) Harnessing space technological applications in sustainable urban development

51. The Chief Executive Officer of the Atlantic International Research Center (Air Centre) presented the outcomes of this joint project with UNCTAD aimed at enhancing sustainable urban development through space-

based technologies. The project, implemented in Brazil and South Africa, emphasized the use of satellite data and artificial intelligence for intelligent land management. It delivered hands-on, high-level training through a series of workshops, notably leveraging the Julia programming language for earth observation and deep learning applications. Workshops under the joint UNCTAD-AIR Centre project were conducted in the Azores, Brazil, and South Africa included both in-person and virtual components, reaching over a hundred participants each.

52. There is strong demand from other countries to replicate this initiative, underlining the quality and potential of local talent in developing countries. It is desirable to develop cooperative platforms to support technical collaboration and community-building, which would enable local experts to engage globally on equal terms.

53. The financial contribution from Portugal for this project was gratefully acknowledged.

c) Science, technology, and innovation parks: assessment and policy issues

54. Representatives from Ghana, Mozambique, Mongolia and Uzbekistan presented national strategies to develop inclusive and sustainable STI park ecosystems. STI parks were recognized as important instruments for advancing sustainable development and building resilient, knowledge-based economies. Emphasis was placed on the integration of STI parks into broader development plans, supported by institutional coordination and legal frameworks. They appreciated the capacity building that UNCATD has provided under its project entitled "Science, Technology and Innovation Parks for sustainable development: building expertise in policy and practice in selected Asian and African countries" (April 2023- April 2026), which is funded by the 2030 Agenda for Sustainable Development Sub-Fund under the United Nations Peace and Development Trust Fund, and called for continued support from UNCTAD.

55. Academic experts from the Massachusetts Institute of Technology (MIT) and Japan's Okayama University shared MIT's living lab model for sustainability, which integrates research, operations and policy development, and Japan's Society 5.0 model during which Okayama University is leading the creation of local smart healthcare ecosystems. Both models share key features of STI park notion used in the UNCTAD project, which is as broad

as to include physical organizational forms that promote innovation and commercialization of research outcomes into products and services, and facilitate linkages or interactions between research and industries.

56. Discussions highlighted the importance of peer learning in harnessing STI parks to support sustainable development. STI parks help foster innovation, support entrepreneurship and promote stronger links between academia, research and industry, hence the need to integrate STI parks into STI policies and national development plans. Gender-responsive policies should be embedded across STI park planning and operations to ensure equitable access to opportunities, leadership and skills. Sound legal frameworks, stakeholder inclusion and clear governance mechanisms are essential for the long-term success and relevance of STI parks.

57. Burkina Faso and Peru expressed interest in participating in the UNCTAD project.

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