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Science, technology and innovation for sustainable development

Report of the Secretary-General

Summary

The present report is submitted pursuant to General Assembly resolution 78/160 and provides information on the implementation of the resolution, in particular through the work of the Commission on Science and Technology for Development, the United Nations Conference on Trade and Development and other relevant United Nations organizations. In the report, the Secretary-General discusses the role of science, technology and innovation in addressing multiple crises and reducing poverty; presents findings from high-level policy discussions on science, technology and innovation as an enabler of sustainable development at the national, regional and global levels; discusses strengthening capacities for science, technology and innovation; outlines the progress made in implementing the outcomes of the World Summit on the Information Society; highlights initiatives to enhance global support mechanisms for science, technology and innovation; and provides recommendations to support sustainable development.

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I. Introduction

1. In response to General Assembly resolution 78/160, the present report contains information on the role of science, technology and innovation in addressing multiple crises and reducing poverty. It also contains findings from high-level policy discussions on ways to harness science, technology and innovation for the achievement of sustainable development. It includes a discussion on strengthening capacities for science, technology and innovation and a summary of discussions concerning the progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society. In the report, initiatives are highlighted to enhance global support mechanisms for science, technology and innovation.

2. Section II below contains an analysis of how science, technology and innovation could be leveraged to address multiple crises, reduce poverty and help to implement the 2030 Agenda for Sustainable Development. Section III contains findings from high-level policy discussions on the ways to advance strategic planning on science, technology and innovations for sustainable development. Section IV includes the work of the United Nations system in building science, technology and innovation capacities. Section V provides a conclusion and recommendations to Member States and the international community.

II. Role of science, technology and innovation

3. The Commission on Science and Technology for Development, the United Nations focal point for science, technology and innovation for sustainable development, acts as a forum for strategic planning, sharing lessons learned and providing foresight about trends in science, technology and innovation in key sectors of the economy, as well as drawing attention to emerging technologies. At the Commission's ministerial round tables in 2024 and 2025, participants reaffirmed the central role of science, technology and innovation in accelerating progress towards the 2030 Agenda and expediting the implementation of the Sustainable Development Goals, particularly in addressing poverty, inequality and digital exclusion. In their discussions, delegates emphasized the importance of international cooperation, technology transfer and capacity-building for promoting sustainable development, especially in developing countries. They underscored the necessity of empowering women and marginalized groups in science, technology and innovation, highlighting national programmes focused on digital literacy and support for female entrepreneurs and researchers. Participants stressed the importance of strengthening national science, technology and innovations ecosystems through infrastructure development, investment in human capital, support for micro-, small and medium-sized enterprises and start-ups and the integration of science, technology and innovation into national development policies. Digital inclusion and rural connectivity emerged as significant themes, along with the role of multilateral forums, including the Commission, in facilitating dialogue, sharing best practices and guiding strategic foresight.

4. The 2024 round table was shaped notably by the context of the post-coronavirus disease (COVID-19) recovery and challenges that all countries face from the convergence of multiple crises, also known as a polycrisis. Participants highlighted the central importance of building resilience to crises, reducing global inequalities in access to science, technology and innovation across and within countries, the need for adaptive public health and green technology solutions, and progress in the digital and energy transitions. The 2025 round table highlighted the urgency of addressing emerging technologies and digital divides, advocating for inclusive global governance, open science and equitable access to digital infrastructure and artificial

intelligence capabilities. Delegates shared national experiences and initiatives such as regional innovation hubs, providing digital public infrastructure, and issues related to intergenerational equity, placing emphasis on youth empowerment as well as the commercialization of science, technology and innovation and the development of knowledge-based economies. Inclusive approaches to science, technology and innovation policy gained visibility with an emphasis on initiatives that support women and disadvantaged groups, particularly in rural areas.

III. Advancing strategic planning on science, technology and innovation for sustainable development

5. At its twenty-seventh session, the Commission considered the priority themes of "Data for development" and "Global cooperation in science, technology and innovation for development".[1] At its twenty-eighth session, it considered the priority themes of "Diversifying economies in a world of accelerated digitalization" and "Technology foresight and technology assessment for sustainable development".[2]

A. Data for development

6. The exponential increase in the creation and exploitation of data can be used to inform policymaking and support economic, social and environmental transformation.[3] Such data fuel innovation, improve productivity and support new business models through data-driven ecosystems. When shared and governed responsibly, data contribute to evidence-based policymaking and the achievement of Sustainable Development Goals, particularly by enabling integrated approaches to global challenges such as pandemics and climate change.[4]

7. Several key challenges persist in harnessing data for development, including: (a) the uneven distribution of high-quality, interoperable data, robust infrastructure, skilled human capital and strong data privacy and security frameworks, particularly in low-income countries; (b) market concentration among major technology platforms, which raises concerns about competition and equity, while algorithmic bias and weak data ethics frameworks risk exacerbating social injustices; and (c) the environmental footprint of data technologies, such as high-energy consumption, electronic waste and resource extraction, which threatens sustainability. This underscores the need for integrated, globally coordinated policies for responsible data use.

8. Across sectors, data-driven innovations promote sustainability, from circular economy practices and energy efficiency to smarter urban planning and disaster resilience. In healthcare, data enhance patient care, enable precision medicine and accelerate medical research through advanced analytics and genomics. In climate action, data support environmental monitoring, regulation enforcement and nature-based solutions.

[1] See https://unctad.org/meeting/commission-science-and-technology-development-twenty-seventh-session.

[2] See https://unctad.org/meeting/commission-science-and-technology-development-28th-session.

[3] United Nations Conference on Trade and Development (UNCTAD), *Data for Development* (Geneva, 2024). Available at https://unctad.org/publication/data-development.

[4] UNCTAD, *Digital Economy Report 2024: Shaping an Environmentally Sustainable and Inclusive Digital Future* (Geneva, 2024). Available at https://unctad.org/publication/digital-economy-report-2024.

9. Effective data governance must navigate global differences in values, legal systems and power dynamics. Data governance must be ethical, people-centric and adaptable to technological change. Seven key principles are essential for advancing effective data governance (see E/CN.16/2024/2): (a) foundation in human rights; (b) contextual treatment of data; (c) balance between risk and innovation; (d) empowerment of individuals; (e) multilayered governance approaches; (f) multi-stakeholder inclusivity; and (g) inclusion of young people for future orientation.

B. Global cooperation in science, technology and innovation for development

10. The rapid evolution and growing complexity of new technologies underscore the need for a collaborative approach to science, technology and innovation. Given the scale of global challenges and the key role of science, technology and innovation in addressing them, global cooperation is essential to fulfil the commitment of leaving no one behind.

11. Four key elements are critical for the development of science, technology and innovation: (a) strategic planning, involving agenda setting and the assessment of opportunities and challenges; (b) science, technology and innovation enablers, including physical and digital infrastructure as well as human and knowledge resources; (c) research and development, ranging from basic to applied research; and (d) innovation, encompassing the ideation and commercialization of new goods and services or business models.[5]

12. It is important for national Governments to formulate strategic science, technology and innovation plans with clear, specific and measurable goals, supported by regular assessments of the strengths and weaknesses of their national innovation systems. Governments should also enhance infrastructure and upgrade science, technology and innovation skills to bridge the digital divide and promote the development of science, technology and innovation. To accelerate research and development and the introduction of innovations to the market, countries can establish collaborative mechanisms to promote public-private cooperation and incentivize technology and knowledge transfer among universities, research institutes and the private sector.

13. At the international level, six areas of work are highlighted (see E/CN.16/2024/3):(a) reinforcing efforts to build an inclusive global science, technology and innovation agenda; (b) developing a multilateral science, technology and innovation foresight and assessment system; (c) building enabling digital and skill environments; (d) fostering investment in science, technology and innovation and public-private partnerships; (e) strengthening research networks and collaboration among different actors; and (f) promoting technology and knowledge transfer. To harness science, technology and innovation for sustainable development, it is crucial to enhance international cooperation, revitalize global partnerships and renew efforts towards open, inclusive and equitable collaboration mechanisms.

C. Diversifying economies in a world of accelerated digitalization

14. Technological advancements are reshaping economic diversification opportunities, challenging traditional export-oriented models and fuelling a shift

[5] UNCTAD, *Global Cooperation in Science, Technology and Innovation for Development* (Geneva, 2024). Available at https://unctad.org/publication/global-cooperation-science-technology-and-innovation-development.

toward knowledge-intensive and digital-driven growth. In this framework, it is essential to rethink industrial and innovation policies to drive structural transformation and industrial upgrading.

15. The emergence of digital frontier technologies offers developing countries opportunities to diversify their economies through three key channels: (a) enhancing productivity and boosting export growth; (b) fostering new industries, such as telemedicine and electronic commerce; and (c) promoting a green and digital transition through efficiency and the emergence of new green industries. However, digitalization also presents risks, including the potential for reshoring that could undermine developing countries' participation in global value chains, a reduction in demand for low-skill jobs and a widening productivity gap due to barriers to accessing new digital technologies.

16. Digitalization is creating a new environment to which industrial policies for economic diversification should be adapted. Traditional sector-specific policies need to evolve to foster cross-sectoral synergies, technological innovation and digital transformation. Modern economic diversification policies should not only support the emergence of new industries but also promote inclusive and dynamic innovation ecosystems and adapt to shifts in global production and consumption patterns.

17. Coordinated international efforts are key to leveraging frontier technologies for inclusive economic diversification. This includes strengthening digital infrastructure to support developing countries in adopting technologies. Knowledge-sharing, technology transfer and capacity-building are also important to equip stakeholders in developing countries to effectively use, adapt and develop digital frontier technologies. To steer technological progress towards inclusive development, the international community should strengthen global cooperation on the governance of data and frontier technologies, particularly with regard to the rapidly evolving field of artificial intelligence.

18. Furthermore, as highlighted by the United Nations Conference on Trade and Development (UNCTAD) in its *Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development*, a public disclosure mechanism for artificial intelligence, similar to the environmental, social and governance reporting framework, could promote accountability and contribute to transforming commitments into tangible impact. In addition, a global shared infrastructure, following the European Organization for Nuclear Research model, for example, could provide equitable access to artificial intelligence infrastructure. Open innovation, through open-data and open-source approaches, can democratize knowledge and resources, fostering inclusive artificial intelligence innovation and global collaboration. Strengthening capacity-building through global networks of exchange, technical assistance and regional centres of excellence would enable developing countries to build robust innovation ecosystems to harness the benefits of artificial intelligence and other frontier technologies.[6]

D. Technology foresight and technology assessment for sustainable development

19. Effective, evidence-based and proactive strategic planning is critical in anticipating and reacting to current and future technological changes. Technology assessment and technology foresight both employ systematic methodologies designed

[6] UNCTAD, *Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development* (New York and Geneva, 2025). Available at https://unctad.org/publication/technology-and-innovation-report-2025.

to help to understand and shape the implications of technologies for socioeconomic systems and sustainable development.

20. Classic technology assessment and technology foresight practices operate along different timelines but are complementary tools in addressing technological and societal challenges. Technology assessment is used to evaluate current technologies and mostly immediate impacts, offering actionable insights for shorter-term policy decisions and ensuring that technologies are implemented responsibly, considering the environmental, social and economic impacts as well as other dimensions such as ethical, legal and cultural aspects. Technology foresight is used to anticipate future trends and innovations, guiding long-term strategic planning and investments in research and development. Together, these practices help to provide a comprehensive framework for decision-making. Technology assessment and technology foresight increasingly overlap in practice.

21. Determining whether activities will involve a more technology assessment-oriented focus on shorter-term issues and responses or a more technology foresight-oriented focus on longer-term challenges and opportunities is an important consideration. Ideally, both should be undertaken, and in a complementary manner. Countries employ diverse institutional approaches to technology assessment and technology foresight, reflecting variations in national priorities, political systems, resources and cultures.

22. There are two broad sets of issues for countries in harnessing these tools. The first concerns how to build national capacity to use them, institutionalize them, ensure the independence and inclusivity of such activities and embed them more firmly in science, technology and innovation and broader development policies. The second concerns the role of international collaboration and how to strengthen global support and knowledge-sharing networks on foresight and technology assessment. At the regional level, several networks exist that support futures literacy, foresight and technology assessment. Global platforms are less developed, although there exists a global technology assessment network. Ideally, there should be global platforms that work to raise the standard of technology assessment and technology foresight, share good practices, methodologies and experiences and support countries embarking on related activities for the first time or from a limited base of capacity and experience.

E. Considerations in applying science, technology and innovation in sustainable development

1. Integrating a gender perspective into science, technology and innovation

23. The Commission continues to work on analysing the gender implications of applying science, technology and innovation in sustainable development with the assistance provided by the Gender Advisory Board. The Board’s mandate was extended for a further five years, to begin on 1 January 2026. To achieve gender equality and empower women and girls, it is important for Governments to take appropriate measures, including improving gender equality in education and engaging women and girls as users, content creators, employees, entrepreneurs, innovators and leaders to ensure their active participation in all areas of development. A key achievement has been the reactivation of the Board, which now actively contributes to the work of the Commission. Through expert input for policy reports and participation in intergovernmental sessions, the Board has helped to ensure that the voices and priorities of women and girls are meaningfully reflected in global science, technology and innovation debates.

24. To build the capacity of women researchers in developing countries working in the science, technology and innovation fields, UNCTAD has continued to partner with Okayama University on the Young Female Scientist Programme aimed at reducing the gender gap in science, technology, engineering and mathematics through technical training, mentorship and opportunities to build global research networks. The Programme was established in 2020 and its success has led to its expansion to include participants from Latin America and the Caribbean in addition to Africa and South-east Asia. It has benefited over 34 young women scientists from over 12 developing countries.

25. Another collaborative programme organized under the initiative of the Commission was implemented in partnership with the Atlantic International Research Centre. The programme organized four regional workshops – in Africa and Latin America and the Caribbean – to build capacity in the use of geospatial data for monitoring the Sustainable Development Goals, with a strong emphasis on gender inclusion. The programme advanced Goal 5 by promoting women's leadership in data-driven sustainable development.

2. Technology assessment

26. Technology foresight and assessment exercises could help policymakers and stakeholders to identify challenges, opportunities and new trends that can be addressed strategically, particularly in the context of the 2030 Agenda. UNCTAD completed a pilot project on technology assessment in three African countries in 2025 aimed at building the capacity of African policymakers and other stakeholders in undertaking assessments of the social, environmental and economic impacts of adopting a new technology.[7] Key lessons learned were presented at the Commission session in 2025.

IV. Building capacity for science, technology and innovation

A. Integrating science, technology and innovation policies into national development strategies

27. UNCTAD science, technology and innovation policy reviews provide country-level assessments of national science, technology and innovation capacity and recommendations to strengthen national capacity and the integration of science, technology and innovation into national development strategies. They have helped countries to leverage science, technology and innovation in the development of productive capacities for industry, manufacturing and services, improve policy coherence across major areas of development policy, strengthen policy frameworks for science, technology and innovation and build capacity in the design and implementation of science, technology and innovation policies. Capacity-building is an important element of science, technology and innovation policy review processes and remains a crucial need for the countries reviewed. In this respect, UNCTAD has been delivering capacity-building on science, technology and innovation for the Sustainable Development Goals and is developing an e-learning platform, which became active in 2024. In 2024, UNCTAD completed a science, technology and innovation policy review of Seychelles.

[7] See https://unctad.org/project/technology-assessment-energy-and-agricultural-sectors-africa-accelerate-progress-science.

B. Aligning intellectual property with development strategies

28. A balanced and effective global intellectual property ecosystem should promote innovation and creativity for a better and more sustainable future and support technological diffusion. Governments face increasingly complex challenges regarding how to design an intellectual property system that best serves their policy objectives, responds to rapid technological change and mainstreams intellectual property into economic, development and social policymaking.

29. The World Intellectual Property Organization (WIPO) assists member States in developing and implementing national intellectual property and related innovation strategies or policies that positively influence economic development, innovative and creative capacity and the vitality of enterprises. It offers tailored strategic and process-oriented support to its member States throughout the national intellectual property strategy development process. In particular, it offers strategic advice regarding the intersection of intellectual property and economic development, innovation and creative industry policies; the intellectual property legal framework; the intellectual property policy framework; intellectual property administration; the role of intellectual property in research and development, technology transfer and creative industry support infrastructure; support for businesses, innovators and creators; nurturing a culture of intellectual property; and considerations to enhance the use of intellectual property as a strategic tool by underserved or underrepresented groups.

30. In addition to customized assistance, the WIPO *Methodology for the Development of National Intellectual Property Strategies* (second edition, 2020) provides step-by-step guidance and explanations, including various tools, examples, templates and other resources.

C. Leveraging science, technology and innovation for industrial development

31. The United Nations Industrial Development Organization (UNIDO) offers a portfolio of policy advisory and technical assistance services to support developing countries in integrating industrial and innovation policies into national industrial development strategies, with an emphasis on Sustainable Development Goal 9 on industry, innovation and infrastructure. Two initiatives have been launched recently as part of continuous efforts by UNIDO to adapt its services to meet the changing needs of Members States.

32. Regarding policy advisory services, UNIDO launched an industrial policy laboratory dedicated to supporting the formulation, implementation and evaluation of industrial and innovation policy instruments. With support from the Government of the Republic of Korea, UNIDO is piloting the laboratory in Africa, Asia and Latin America. The laboratory contributes to learning about how concrete policy instruments are designed, managed and evaluated in different countries. It also furthers understanding of the policy capacities underpinning the design, implementation and monitoring of effective industrial and innovation policy instruments in developing countries. It is focused on knowledge co-creation, policy learning and the sharing of innovative policy solutions aimed at speeding up achievement of the 2030 Agenda. A key feature is the inclusion of a dedicated workstream for the mainstreaming of gender perspectives into industrial innovation policies currently running in Latin America and the Caribbean. In summary, the laboratory is a new initiative combining capacity development, analytical work and

networking in support of policymaking capacity-building on innovation and industrial development in Member States.

33. To support innovation, UNIDO launched ScaleX, a new open innovation accelerator, to connect industrial small and medium-sized enterprises, start-ups, corporates and Governments on mission-driven challenges, with an emphasis on green industrial transformation. The programme identifies frontier solutions through global calls, supports experimentation in testbeds and facilitates co-creation with policymakers through dedicated policy sandboxes. It also helps to scale digital public goods and digital public infrastructure that enable inclusive industrial innovation. Initial challenges, such as reducing food loss in supply chains, have been implemented jointly with partners including the Food and Agriculture Organization of the United Nations and global logistics firms, demonstrating a replicable model for public-private collaboration aligned with Sustainable Development Goal 9 and the Global Digital Compact.

D. Developing data for science, technology and innovation policy, research and analysis

1. Indicators on science, technology and innovation

34. The United Nations Educational, Scientific and Cultural Organization Institute for Statistics, the leading global source for research and development statistics, plays a central role in tracking progress on target 9.5 of the Sustainable Development Goals. Since 2021, it has administered a revised survey of research and development statistics to produce data for indicators 9.5.1 (research and development expenditure as a proportion of gross domestic product (GDP)) and 9.5.2 (researchers per million inhabitants), including selected gender-disaggregated research and development indicators. Supporting countries in producing high-quality research and development data remains a key priority, especially in developing regions.

35. The Institute works in close collaboration with international and regional partners, including the Organisation for Economic Co-operation and Development (OECD), Eurostat and the Ibero-American Network on Science and Technology Indicators. These partnerships facilitate data-sharing and the ongoing development of international methodological standards, such as the OECD Frascati Manual.

36. The Institute continues to support capacity development by delivering training and technical support to countries. Since the previous report, it has conducted virtual national training workshops on science, technology and innovation statistics in Bahrain and Malaysia and contributed to an in-person international workshop organized by the United Nations Statistics Division and the National Bureau of Statistics of China.

37. Despite these efforts, data coverage for the indicators of Sustainable Development Goal target 9.5 remains uneven across regions, hindering effective monitoring. To address this, the Institute is actively exploring ways to enhance data availability and coverage. These include improving data collection processes, increasing capacity-building, assessing the feasibility of using alternative data sources and imputation methodologies for missing annual data and strengthening partnerships with regional organizations to support national statistical systems, especially in developing countries.

2. Big data indicators for sustainable development

38. Global Pulse[8] is the Secretary-General's innovation laboratory. It works at the intersection of innovation and the human sciences to inform, inspire and strengthen the ability of the United Nations family and those it serves to anticipate and respond and adapt to current and future challenges. Recent innovation projects from its portfolio include: (a) the Global Pulse accelerator,[9] the United Nations programme for giving promising innovative ideas a real-world impact at scale, ensuring that exceptional United Nations-led solutions reach more communities through adaptable delivery models and future-fit strategies; (b) Data Insights for Social and Humanitarian Action,[10] a multi-partner initiative aimed at accelerating ethical and responsible access to data and artificial intelligence solutions to unlock social impact at scale; and (c) an ongoing collaboration with the Government of Indonesia[11] to co-create a data-driven decision support tool that enhances institutional awareness and identifies critical data gap needs related to sea level rise.

3. Frontier technology readiness index

39. To assess countries' preparedness for frontier technologies, UNCTAD launched the frontier technologies readiness index in 2021. It combines indicators of information and communications technology (ICT), skills, research and development, industrial capacity and access to finance. Updated for the *Technology and Innovation Report 2025*, the index now covers 170 countries, including 124 developing countries. As in previous editions, developed countries in Europe and North America lead the ranking. While developing countries generally rank lower, Singapore stands out, ranking fifth and performing strongly across all dimensions.

40. The index shows that higher per capita GDP is associated with better preparedness for frontier technologies. Nevertheless, some countries outperform expectations, notably India (76 places above its GDP ranking), China and the Philippines (49 places each) and Brazil (41 places), indicating strong potential to seize the opportunities offered by frontier technologies for economic growth and development. Outperforming countries feature greater research and development activity and stronger industry capacities.

41. Developed countries lead across all index dimensions, though gaps vary by subindex. The skills subindex shows the widest disparities, with the least developed countries scoring less than half the score of developing countries as a whole and less than one third of the score of developed countries. Gaps are narrower on the ICT subindex, although the least developed countries still lag. A similar pattern appears in research and development and industry, where disparities between developed and developing countries are wide.

4. Global Innovation Index

42. Since 2007, the WIPO Global Innovation Index has served as a reference tool for over 150 countries to collect science, technology and innovation data, assess innovation performance and shape evidence-based innovation policies. It benchmarks around 130 economies, identifying strengths, weaknesses and data gaps. Since 2023, WIPO has also supported countries in developing subnational indices at the regional or city levels. Alongside tools such as the global innovation tracker and the science

[8] See www.unglobalpulse.org.
[9] See www.unglobalpulse.org/project/un-global-pulse-scale-accelerator.
[10] See https://disha.unglobalpulse.org.
[11] See www.unglobalpulse.org/project/addressing-sea-level-rise-in-asia-and-the-pacific.

and technology cluster ranking, the Global Innovation Index enables analysis at the global, regional and subnational levels.

43. Governments worldwide have long used the Global Innovation Index to help to enhance their innovation ecosystems. A WIPO survey in 2024 found that 77 per cent of member States use the Index to improve metrics or guide national strategies. The Index's broad use has driven demand for innovation data and improved science, technology and innovation reporting accuracy through rigorous data audits.

5. Indicators on telecommunications and information and communications technology

44. The International Telecommunication Union (ITU) provides trusted, high-quality ICT statistics to support evidence-based decision-making. Its work spans the full data life cycle – from setting global standards to collecting, analysing and disseminating data – and includes capacity-building and international cooperation. ITU helps countries to produce statistics on ICT infrastructure and on access to and use of ICT by households and individuals. It offers methodological guides, online courses through the ITU Academy and national and regional workshops to strengthen statistical capacity. Upon request and subject to available resources, ITU also provides targeted technical assistance, particularly to developing countries.

E. Promoting regional development of science, technology and innovation

1. Africa

45. The Economic Commission for Africa (ECA) successfully held the seventh African Regional Science, Technology and Innovation Forum.[12] The Forum called for adopting a business-oriented approach, harmonizing regional and international agendas with national priorities, establishing a dedicated science, technology and innovation think tank and designing workplans and indicators for monitoring and evaluating the implementation of science, technology and innovation initiatives, strategies and forum outcomes.

46. Launched in October 2024 by ECA, the Origin Research and Innovation Hub[13] is a sustainable continental platform for solving complex problems, co-creation and showcasing innovative ideas and for nurturing talent with groundbreaking research ideas. The first of the planned physical hubs is hosted by the Dedan Kimathi University of Technology in Kenya.

47. ECA is also supporting Africa in addressing high unemployment levels through innovation and entrepreneurship promotion. In this regard, the Alliance of Entrepreneurial Universities in Africa seeks to stimulate African universities to seed and nurture 1 million start-ups with an annual revenue of $100 billion by 2033. The Alliance currently has about 48 official members with a combined 1.3 million students and 48,000 researchers, and another 40 participating universities.

48. ECA has developed partnerships with private and public entities to upskill over 9,000 young people and educators from 14 African countries in digital technologies with the aim of attracting more students to science, technology, engineering and mathematics fields and careers, which is key to building research capacity in Africa. ECA is actively working with Rwanda to establish a centre of excellence for science, technology, engineering and mathematics for Africa. Other similar centres of

[12] See www.uneca.org/eca-events/astif2025.

[13] See https://originlabsafrica.org.

excellence have been established on artificial intelligence in the Congo and on ICT security in Togo.

49. These efforts are aligned with the Global Digital Compact and with national and regional science, technology and innovation policies such as the Science, Technology and Innovation Strategy for Africa 2034 adopted in 2025. The efforts are also intended to strengthen domestic innovation capacities to accelerate African integration into regional and global supply chains to sustainably drive economic development and poverty reduction.

2. Asia and the Pacific

50. The Economic and Social Commission for Asia and the Pacific continues to be actively engaged in promoting innovations in business models to achieve the Sustainable Development Goals. One such innovation is inclusive business, which is defined by the Group of 20 as a business that provides goods, services and livelihoods on a commercially viable basis to people living at the base of the economic pyramid, making them a core part of the value chain as suppliers, distributors, retailers or customers. Since the endorsement by ministers of the economy of Association of Southeast Asian Nations (ASEAN) countries of the "Guidelines for the promotion of inclusive business in ASEAN", the Economic and Social Commission for Asia and the Pacific has further supported their endorsement of the "Model framework for an inclusive business accreditation system in ASEAN", making South-East Asia the first region to have such a framework for inclusive business.[14] The framework differentiates between traditional and inclusive businesses, allowing for the provision of fiscal and non-fiscal incentives to businesses that go beyond the profit imperative.

3. Europe

51. The Economic Commission for Europe (ECE) has played a pivotal role in supporting member States on the 2030 Agenda, notably by putting science, technology and digitalization opportunities to use through innovation.

52. ECE work on innovation supports member States in strengthening innovation governance through national and regional reviews, policy dialogue, capacity-building and sharing experiences at intergovernmental meetings. One example is the ECE Transformative Innovation Network,[15] which continues to grow and in 2024 evolved to fill an essential but overlooked gap by allowing for member-driven initiatives and multi-stakeholder engagement of both developed and transition economies to promote solutions and new ideas on cross-cutting areas such as circularity, innovation-enhancing procurement and policy and institutional innovation. The Network has encapsulated its learnings in a forthcoming charter on transformative innovation intended to serve as a normative instrument to guide ECE and member States in designing, reforming and experimenting with innovation policies, institutions and processes for the Sustainable Development Goals and beyond.

53. Science, technology and innovation also feature in ECE trade workstreams. In 2024, ECE completed a guide on the compliance of products with embedded artificial intelligence, and in 2025 it launched a declaration that interested parties can sign to help to harmonize technical regulations for such products.[16]

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[14] Association of Southeast Asian Nations secretariat, *Guidelines for the Promotion of Inclusive Business in ASEAN* (Jakarta, 2020). Available at https://asean.org/wp-content/uploads/2021/09/6-ASEAN-IB-Promotion-Guidelines-Endorsed-at-the-52nd-AEM.pdf.

[15] See https://unece.org/eci/icp/ETIN.

[16] See https://unece.org/trade/publications/ece_trade_486.

54. The United Nations Centre for Trade Facilitation and Electronic Business plays a central role in developing standards for electronic commerce used daily in global supply chains. The United Nations transparency protocol initiative develops digital product passports,[17] streamlining trade and ensuring traceability and compliance, especially for emerging economies. Similarly, the call to action for digital trade[18] initiative of ECE and the International Chamber of Commerce allows public and private actors to develop and adopt standards to ensure seamless data flows and exchange in digital trade.

55. Exploring further the challenge of balancing the need for rules and governance on artificial intelligence while enabling broad innovation that would discover and realize benefits requires cross-cutting work on innovation, trade, standardization and regulatory cooperation. A mixture of formal and informal intergovernmental mechanisms such as the ECE Transformative Innovation Network will be pillars for future work, building on long-standing experience in consensus-building and norm-setting.

4. Latin America and the Caribbean

56. The Economic Commission for Latin America and the Caribbean (ECLAC) has been promoting science, technology and innovation policies as a driving force not only to boost productivity but also to close persistent social and economic gaps, strengthen institutional capacities and enhance regional cooperation. ECLAC is advancing concrete initiatives that foster sustainable and inclusive productive development, aligned with the Sustainable Development Goals.

57. The Conference on Science, Innovation and Information and Communications Technologies, a subsidiary body of ECLAC, seeks to connect scientific, technological and innovation efforts with productive development.[19] The Conference's workplan for 2024–2025 is advancing with activities aimed at sharing knowledge, creating spaces for coordination and providing training and technical assistance, and by establishing five working groups to address key issues such as policy instruments, governance, territorial approaches, strategic sectoral agendas and the Caribbean.[20]

58. In 2024, ECLAC organized the ninth Ministerial Conference on the Information Society in Latin America and the Caribbean, at which countries adopted a renewed digital agenda for 2026 including 38 goals aligned with World Summit on the Information Society mandates and Global Digital Compact principles. Key elements of the agenda include four thematic working groups (on the digital economy, artificial intelligence, meaningful connectivity and the Caribbean subregion), a digital development observatory and a digital transformation laboratory. These initiatives strengthen regional cooperation and advance digital transformation goals across the region.[21]

59. The ECLAC platform on cluster initiatives and other productive articulation mechanisms is aimed at bringing visibility to such initiatives, fostering mutual

[17] See https://unece.org/trade/documents/2024/07/informal-documents/briefing-note-draft-recommendation-no-49-united-nations.

[18] See https://unece.org/trade/uncefact/CallToAction.

[19] Economic Commission for Latin America and the Caribbean, "Science, technology and innovation for sustainable and inclusive productive development: guidelines for 2024–2025". Available at www.cepal.org/en/publications/69094-science-technology-and-innovation-sustainable-and-inclusive-productive.

[20] See www.cepal.org/en/subsidiary-bodies/conference-science-innovation-and-information-and-communications-technologies.

[21] See https://conferenciaelac.cepal.org/9/en.

learning, promoting cooperation and strengthening their impact across the region.[22] These efforts represent strategic ways of organizing productive development initiatives, particularly those related to science, technology and innovation, adopting a strong territorial focus.

5. Western Asia

60. The Economic and Social Commission for Western Asia (ESCWA) has been partnering with relevant stakeholders to use science, innovation and technology to accelerate progress towards achieving the Sustainable Development Goals. Initiatives include the Government Electronic and Mobile Services Maturity Index,[23] which assesses annual progress towards the implementation of digital transformation in government services. The index methodology was updated in 2024 to accommodate the use of emerging technologies such as artificial intelligence and Blockchain in providing digital services. Interactive learning courses converted compendiums on water, sanitation and hygiene and renewable energy into self-paced, engaging online courses. The third Arab Small and Medium-sized Enterprises Summit brought together regional stakeholders to promote innovation and digital transformation for small and medium-sized enterprises. The eCommerce Acceleration initiative helps to equip small and medium-sized enterprises with digital skills to successfully transition to online selling. The Arab Creative Market platform is creating a directory of over 600 creative micro-businesses to boost visibility and market access. The intellectual property clinic for small and medium-sized enterprises, in collaboration with WIPO, helps such enterprises to integrate intellectual property into business strategy.

61. Under the framework of the Arab Digital Inclusion Platform, ESCWA expanded its scope to address emerging technologies and the needs of older persons by developing a template for national policies on the accessibility of emerging technologies and technical electronic accessibility guidelines for older persons. ESCWA has continued its collaboration with the World Summit Awards by organizing the ESCWA Digital Arabic Content Award for Sustainable Development. The *Arab Sustainable Development Report 2024*[24] was launched, providing policy analysis of the Sustainable Development Goals, including science-, technology- and innovation-related goals and targets. ESCWA launched the Expediting the Use of Technology and Innovation to Enhance Operations in Arab Public Institutions (ENACT) project to support Governments in the Arab region in strategically and innovatively deploying emerging technologies. Several reports were produced, including on leveraging emerging technology and innovation for enhancing public institutions and InnoCook, an innovation model to enhance operations and services of Arab public institutions. ESCWA promotes science, technology and innovation through the Arab digital agenda for 2023–2033 as the region-wide strategy for digital development. The agenda provides a 10-year strategic framework to guide Arab countries in leveraging digital technologies and innovation. ESCWA has operationalized the agenda through a dedicated portal,[25] as well as a collaboration and partnership framework portal.[26] Since 2021, ESCWA has also co-organized the Digital Cooperation and Development

[22] See www.cepal.org/es/proyectos/plataforma-iniciativas-cluster-otras-iniciativas-articulacion-productiva-territorial.

[23] United Nations Economic and Social Commission for Western Asia, *Government Electronic and Mobile Services (GEMS-2024) Maturity Index* (Beirut, 2024). Available at www.unescwa.org/sites/default/files/pubs/pdf/government-electronic-mobile-services-gems-maturity-index-2024-arabic_0.pdf.

[24] See www.unescwa.org/sites/default/files/pubs/pdf/arab-sustainable-development-report-2024-english.pdf.

[25] See https://ada.unescwa.org/en.

[26] See https://ada.unescwa.org/en/cpf.

Forum, a multi-stakeholder policy platform to facilitate dialogue and cooperation on digital and emerging technologies.

F. Implementing the outcomes of the World Summit on the Information Society

62. In accordance with the mandate given by the Economic and Social Council and the General Assembly, most recently in Council resolution 2024/13, the Commission serves as the focal point in the system-wide follow-up to the outcomes of the World Summit on the Information Society.

63. In 2024 and 2025, the Secretary-General issued reports on the progress made in the implementation of and follow-up to the outcomes of the Summit at the regional and international levels (see A/79/62-E/2024/3 and A/80/62-E/2025/12). These reports underscore the importance of aligning the outcomes with evolving global digital priorities, such as those outlined in the Global Digital Compact. Furthermore, in the reports, the Secretary-General emphasized that the resulting technological progress and benefits remain unevenly distributed, both between and within countries. This disparity underscores the need for strengthened international and multi-stakeholder cooperation to achieve the goal of universal and meaningful connectivity. The Secretary-General also observed in the reports that the rapid advance of artificial intelligence presents challenges for digital governance, particularly in fostering accountability and inclusivity and recognizing the links between digital development and environmental sustainability.

64. At its twenty-eighth session pursuant to Economic and Social Council resolution 2023/3, the Commission undertook a dedicated discussion on the 20-year implementation of the outcomes of the Summit, using the secretariat's comprehensive report as background information. The discussions highlighted the unprecedented technological transformations in the information society over the past 20 years, while also acknowledging persistent challenges such as inequalities and digital fragmentation. The Commission identified strategic priorities to guide the way forward, including enhancing digital inclusion and aligning the Summit's action lines with the Global Digital Compact, the Sustainable Development Goals and emerging technological realities such as artificial intelligence. The "WSIS+20" discussion conducted by the Commission, along with the adopted draft resolution and the secretariat's report, will serve as inputs to the General Assembly's "WSIS+20" review in December 2025.

65. In March 2025, the Commission established a working group on data governance pursuant to paragraph 48 of annex I to General Assembly resolution 79/1. The working group will report to the Assembly at its eighty-first session, reflecting a comprehensive and inclusive multi-stakeholder dialogue on data governance at all levels. The Commission reaffirmed its commitment to an inclusive, transparent and multi-stakeholder process and welcomed initiatives such as the working group, the implementation map for the Compact and the mapping matrix relating to the Summit, the Compact and the Sustainable Development Goals.

G. Strengthening global support mechanisms for science, technology and innovation

1. Technology facilitation mechanism

66. The Technology Facilitation Mechanism, established pursuant to the Addis Ababa Action Agenda and launched under the 2030 Agenda, supports the implementation of

the Sustainable Development Goals through four components: (a) the inter-agency task team on science, technology and innovation for the Goals; (b) the United Nations Group of 10 High-level Representatives of Civil Society, the Private Sector and the Scientific Community to Promote Science, Technology and Innovation for the Sustainable Development Goals (10-Member Group); (c) the annual multi-stakeholder science, technology and innovation forum; (d) and an online platform. The Mechanism complements the Commission by bringing together various stakeholders focused on science, technology and innovation solutions. Exemplifying a One United Nations, multi-stakeholder model, the inter-agency task team engages over 120 staff from 51 United Nations entities and thousands of scientists and partners. Key workstreams include: (a) the science, technology and innovation for the Goals road maps programme, which helps countries to align science, technology and innovation strategies with the Goals through guidebooks and workshops; (b) a capacity-building stream that delivers science, technology and innovation policy training; and (c) other efforts focusing on frontier technologies, emerging science and gender equality in science, technology engineering and mathematics.

67. The ninth and tenth science, technology and innovation forums took place in May 2024 and May 2025, respectively. The 2024 forum was focused on reinforcing the 2030 Agenda and eradicating poverty amid multiple crises, highlighting research and innovation funding, scientific cooperation for climate action and gender-responsive, locally adapted science, technology and innovation for hunger and poverty reduction. It also addressed science, technology and innovation ecosystems in small island developing States, digital innovation for peace and climate resilience, and partnerships for structural transformation in Africa and the least developed countries. The 2025 forum, marking its tenth anniversary, emphasized inclusive, evidence-based science, technology and innovation aligned with the Pact for the Future. Key topics included equitable artificial intelligence, gender equality in science, technology and innovation, ocean and coastal conservation, increased science, technology and innovation financing and capacity, and strengthened global research collaboration.

68. The 10-Member Group provided substantive leadership for the 2024 and 2025 forums. It highlighted the dual role of artificial intelligence as a driver of development and a source of ethical, environmental and social risk, calling for inclusive and affordable artificial intelligence, strong governance and integrated science, technology and innovation responses to planetary boundaries. The Group reaffirmed the importance of fundamental science and called for greater investment in inclusive science, technology and innovation systems, warning against the unchecked expansion of artificial intelligence and its potential to worsen inequality. The Group also emphasized gender-inclusive science, technology and innovation, stronger multilateral governance, global research collaboration and its ongoing commitment to independent, impactful scientific advice for the 2030 Agenda.

69. Under the Pact for the Future, the Mechanism, including the inter-agency task team and 10-Member Group, is tasked with following up on the implementation of chapter 3 on science, technology, innovation and digital cooperation. United Nations system efforts will focus on strengthening science, technology and innovation foresight, scaling capacity-building and fostering open science and inclusive innovation. The Mechanism will coordinate multi-stakeholder engagement, mobilize resources and advise Governments and United Nations country teams, reinforcing its global science, technology and innovation leadership.

2. Technology Bank for the Least Developed Countries

70. The Technology Bank for the Least Developed Countries has adopted a new strategic plan for 2025–2027, informed by technology needs assessments and other

engagements with the least developed countries. The plan structures the Technology Bank's work around three strategic pillars: (a) high-impact policy and technical advisory services; (b) capacity-building for transformation; and (c) knowledge for results. The Technology Bank will provide targeted support to address key science, technology and innovation challenges and enhance its role as a knowledge broker. Capacity-building efforts will focus on strengthening national science, technology and innovation strategies, delivering specialized training and scaling programmes in high-impact areas identified through technology needs assessments. These efforts build on the Technology Bank's experience in implementing assessments in 16 of the least developed countries – most recently in the Lao People's Democratic Republic, Malawi and the United Republic of Tanzania – with new assessments under way in Burkina Faso and Nepal. These assessments remain a foundational tool for identifying priority technology needs and informing national strategies. As an institution fully funded by voluntary contributions, the Technology Bank relies on sustained support from partners to fulfil its mandate as the focal point on science, technology and innovation for the least developed countries and to deliver on the ambitions of its new strategic plan.

V. Conclusions and recommendations

71. Science, technology and innovation bring enormous opportunities to accelerate progress towards the Sustainable Development Goals, but they also present new challenges, including perpetuating divides within and between countries. Governments and other stakeholders have a major role to play in guiding the development and deployment of science, technology and innovation as well as in creating and supporting an enabling environment at all levels to ensure that technological advancements foster sustainable development and leave no one behind.

72. The increasing complexity and rapid evolution of new technologies, along with the profound changes driven by recent waves of innovation, underscore the urgent need for a collaborative approach to science, technology and innovation. Given the scale of global challenges and the immense potential of science, technology and innovation to address them, it is important to strengthen international solidarity and cooperation, revitalize global partnerships and reinvigorate open, inclusive and equitable collaboration mechanisms.

73. Member States may wish to consider the following recommendations:

(a) Develop strategic plans for science, technology and innovation with clear, specific and measurable goals to seize the opportunities brought by technological advancement, based on a comprehensive assessment of national strengths and weaknesses and the identification of synergies and gaps between national priorities and the international science, technology and innovation agenda;

(b) Adapt technology assessment and technology foresight to national and subnational contexts to ensure relevance and effectiveness in addressing local challenges;

(c) Promote a whole-of-government, multi-stakeholder and multisectoral approach to align science, technology and innovation strategies and policies with those of other domains, such as the industrial and environmental sectors, to maximize synergies and enhance policy coherence;

(d) Strengthen cooperation among key actors in the innovation ecosystem and support the transition from basic to applied research by developing collaborative mechanisms that incentivize technology and knowledge transfer among universities,

research institutes and the private sector as well as leverage affiliates of foreign companies to enhance knowledge exchanges with international partners;

(e) Foster digital literacy and skills development by prioritizing science, technology, engineering and mathematics education, training government officials for the effective design and implementation of science, technology and innovation policy and offering reskilling and upskilling programmes to equip the workforce for digital transformation and evolving job demands, with particular attention to vulnerable groups;

(f) Build accessible, affordable and high-quality digital infrastructure to provide the digital connectivity and computing power necessary for technology adoption and development;

(g) Mobilize domestic resources by facilitating co-funding schemes and cooperation involving the private sector, as well as attract foreign direct investment to accelerate digital infrastructure, innovation, capacity-building and job creation;

(h) Modernize regulatory frameworks for digital technologies and businesses, including artificial intelligence governance, data protection laws and ICT security frameworks, supported by regular reviews to uphold standards, protocols and ethical considerations.

74. At the international level, the following recommendations may be considered:

(a) Support the establishment of monitoring, evaluation and accountability mechanisms to foster trust, transparency and inclusivity in international science, technology and innovation collaboration, while enhancing coordination among international bodies to align agendas, share initiatives and build consensus on a shared vision for global science, technology and innovation development;

(b) Develop a global consensus on governance frameworks to ensure the responsible development and adoption of technology, particularly artificial intelligence and data analytics, by enhancing international cooperation to prevent misuse and uphold human rights;

(c) Promote the exchange and sharing of technological knowledge, policy experiences, technical cooperation and research collaboration to accelerate technology adoption and foster innovation;

(d) Enhance capacity-building by supporting developing countries in establishing strong educational and lifelong learning systems that integrate digital skills into current curricula, offering industry and occupations specific training and promoting research and development partnerships among Governments, academic institutions and industry to strengthen technological capabilities;

(e) Develop methodological standards for technology assessment and technology foresight at the international level to promote mutual understanding and learning of both practices across national and regional contexts, to enable consistent comparisons across countries and to promote the use of shared tools to address global technological challenges;

(f) Increase the share of official development assistance for science, technology and innovation and explore innovative financing models, public-private partnerships and open-source and open-science approaches to support developing countries in collaborative science, technology and innovation projects and initiatives;

(g) Support investments in national infrastructure development and scale up collective actions on digital public infrastructure to enable technology deployment for economic diversification and industrial upgrading, particularly in countries with fewer resources;

(h) Establish a global open innovation strategy to promote knowledge-sharing, improve transparency and foster collaboration through open-data and open-source approaches in order to guide technological development, address global challenges and amplify the impact of international initiatives, with the United Nations serving as a key connector across efforts.