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Economic and environmental questions:
Science and technology for development

**Progress made in the implementation of and follow-up to the
outcomes of the World Summit on the Information Society at
the regional and international levels**

Report of the Secretary-General

Summary

This report has been prepared in response to Economic and Social Council resolution 2006/46, which requested the Secretary-General of the United Nations to inform the Commission on Science and Technology for Development about the implementation of the outcomes of the World Summit on the Information Society. The report highlights major developments and activities by stakeholders in 2022. It was prepared by the secretariat of the United Nations Conference on Trade and Development, based on information provided by entities in the United Nations system, international organizations and other stakeholders.

* E/2023/1.



Introduction

1. This report has been prepared in response to Economic and Social Council resolution 2006/46. It includes information provided by 32 entities in the United Nations system, international organizations and other stakeholders in response to a letter from the Secretary-General of the United Nations Conference on Trade and Development (UNCTAD) requesting contributions on trends, achievements and obstacles in the implementation of World Summit on the Information Society (WSIS) outcomes.¹ The report summarizes developments and activities in 2022.

I. Key trends

A. The changing context of digital cooperation

2. The WSIS outcomes recognize the potential of information technology to enhance development, establish targets for connectivity and foster collaboration among stakeholders in Governments, business and civil society, to leverage opportunities to advance the common good. The Sustainable Development Goals reinforce the WSIS goal that no one should be left behind in digital development.

3. The information society has evolved significantly since WSIS. It is increasingly difficult in many countries to separate digital from non-digital activity in Government, business and individual behaviour. The impacts of digitalization now reach almost every area of public policy. Progress has, however, been unequal. Although 63 per cent of the global population made some use of the Internet in 2021, opportunities in digital development remain beyond the reach of many people, particularly those in greatest need. In the least developed countries, the proportion of Internet users is 27 per cent, less than half the global average.² Achieving universal connectivity requires continuing cooperation between Governments and other stakeholders. There are also growing concerns that, in addition to the existing connectivity divide, a data divide is emerging, ultimately leading to a significant development divide.

4. Digital development has revealed new challenges for the international community in seeking to enable universal inclusion in the digital economy, redress inequalities of poverty and gender, integrate digital development and environmental sustainability and address threats to cybersecurity, including cybercrime. These challenges have reinforced the need for digital cooperation.

¹ Association for Progressive Communications (APC); Council of Europe; Economic and Social Commission for Asia and the Pacific (ESCAP); Economic and Social Commission for Western Asia (ESCWA); Economic Commission for Africa (ECA); Economic Commission for Europe (ECE); Economic Commission for Latin America and the Caribbean (ECLAC); End Child Prostitution in Asian Tourism International; Food and Agriculture Organization of the United Nations (FAO); Global System for Mobile Communications Association (GSMA); International Federation of Library Associations and Institutions (IFLA); Internet Society (ISOC); International Telecommunication Union (ITU); International Trade Centre; Office of the Secretary-General's Envoy on Technology; Organisation for Economic Co-operation and Development (OECD); UNCTAD; United Nations Children's Fund (UNICEF); United Nations Department of Economic and Social Affairs (DESA); United Nations Development Programme (UNDP); United Nations Educational, Scientific and Cultural Organization (UNESCO); United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women); United Nations Environment Programme (UNEP); United Nations Industrial Development Organization; United Nations Office on Drugs and Crime; United Nations Relief and Works Agency for Palestine Refugees in the Near East; Universal Postal Union; World Bank; World Food Programme; World Health Organization (WHO); World Intellectual Property Organization; World Meteorological Organization; World Trade Organization. See <https://unctad.org/webflyer/2022-report-secretary-general-progress-made-implementation-and-follow-outcomes-world>.

Note: All websites referred to in footnotes were accessed in January 2023.

² <https://datahub.itu.int/data/?c=&i=11624&e=>.

5. *Report of the Secretary-General: Road Map for Digital Cooperation* sets out a framework for establishing common goals.³ Consultations are under way on a global digital compact that will outline shared principles for an open, free and secure digital future for all. Critical areas under consideration include the digital commons as a global public good.⁴ Once agreed, the compact will form a key component deliberations at the Summit of the Future to be held in 2024, which will aim to forge a new global consensus on how the future should look and how to secure it. Digital cooperation is recognized as central to this future.

B. The impact of conflict and the risk of cyberconflict

6. Digitalization has changed all aspects of society, enabling both positive and negative impacts on sustainable development, including new risks but also opportunities. The Open-ended Working Group on Developments in the Field of Information and Telecommunications in the Context of International Security states that “negative trends in the digital domain could undermine international security and stability, place strains on economic growth and sustainable development and hinder the full enjoyment of human rights and fundamental freedoms”.⁵

7. Violent conflict remains one of the greatest challenges facing the international community, costing lives, uprooting communities and disrupting the potential for economic growth. The war in Ukraine has had profound effects on global cooperation, food and energy supplies and economic prospects. Conflicts have seen the increasing use of digital technology in weaponry, with direct effects on military and civilian targets. The growing sophistication of military technology poses risks that reach beyond established international agreements.

8. Conflicts also increasingly take place in cyberspace. Infrastructure of all kinds can be disrupted by a distributed denial of service and other disruptions by governmental or non-governmental actors. Information concerning national security, businesses and individuals can be hacked. Many countries lack the required protective cybersecurity infrastructure. In addition, conflicts can be conducted digitally through the use of propaganda and disinformation. The spread of social media and the speed with which content can become viral create new opportunities during conflicts. New technologies, such as for the manipulation of video through the use of images of real protagonists, exacerbate the risk that false messages will gain credence or cause disruptions.

9. Alongside these risks, information and communications technology (ICT) can also help to reduce conflict and facilitate peace-making and peacekeeping. Digital technologies have enabled more people to record and monitor events, giving journalists more opportunities to verify or contest official narratives and human rights observers greater scope to challenge violations. Digital infrastructure is often restored quickly when peace returns, enabling better monitoring of signs of recrudescing violence and facilitating dialogue that helps in reconstruction and peace-making.

C. Developments in traditional and social media

10. New technology continues to have significant impacts on the media environment, including on the ways in which people access news and entertainment, the viability of traditional media sources and the reliability of information. Concern about misinformation and disinformation and the power and ownership of social media platforms is increasing. For many, social media and other online platforms have displaced traditional sources such as newspapers, radio and television as primary news media. This has undermined the financial models of the latter and broadened the range of news providers, to include citizens alongside professional journalists. While enabling more diverse content to become available, this change has increased uncertainty about the authoritativeness and reliability of media. In

³ <https://www.un.org/en/content/digital-cooperation-roadmap/>; <https://digitalcooperation.org/>.

⁴ https://www.un.org/techenvoy/sites/www.un.org.techenvoy/files/Global-Digital-Compact_how-to-engage-guide.pdf.

⁵ A/75/816.

addition, substantial changes have taken place among the social media platforms used to access information and entertainment.

11. The consideration of such changes is increasingly important because of the prevalence that platforms have achieved in consumer information markets and because the changes have led to widespread concerns about the relationship between platforms and politics, the desirability of content moderation and the risk of surveillance, the concentration of media ownership and the potential influence of global platforms on democratic governance and national sovereignty.

D. Regulation and data governance

12. The growing importance of information technology across all areas of society has increased awareness of the role of regulation in shaping digital development for the common good. ICTs evolve within frameworks that include technical standards and international norms, the policies of national Governments and laws and regulations governing such areas as consumer and employment rights. The global nature of the Internet and the transnational character of digital enterprises, which include some of the world's largest corporations, pose challenges for national Governments. These have been most significant where innovations reach beyond the capabilities of previous generations of technology.

13. In regulatory approaches, some Governments have prioritized innovation and national economic value and others have placed greater emphasis on national security and social order. A notable divergence has emerged in areas such as data protection and surveillance and there is potential divergence in governing the infrastructure underpinning digital development. There is concern that divergence can lead to fragmentation of the universal protocols that underpin the Internet.

14. Some areas of regulatory intervention are concerned with the dynamics of international relations, such as the geographical concentration of digital innovation and data management, and cross-border jurisdiction. Others reflect long-established concerns about communications regulation, including with regard to competition policy, tariffs and consumer rights. Still others are concerned with content moderation, including the relationship between freedom of expression and the right to privacy, control of hate speech and abuses such as child exploitation and harassment, disinformation and criminal behaviour, such as fraud. The governance of data is particularly prominent in this context, as digital corporations have built business models dependent on leveraging personal information and combining data sets, to target advertising and maximize revenue and Governments may use data to help improve public services and, in some cases, monitor citizen behaviour. Different regulatory approaches have emerged concerning the rights of individuals over personal data, the availability of data for Governments and corporations and jurisdictional questions on data sovereignty and localization.⁶ Regulatory challenges arising due to such issues are complex, particularly where the need for international enforcement interacts with differences in national laws and norms. International forums are increasingly concerned with such issues, and numerous initiatives address the ethical dimensions of emerging technologies such as machine learning and artificial intelligence.

15. In order to ensure an inclusive process, with the representation of all developing countries, the United Nations needs to play key role. A global effort needs to build on existing initiatives in the United Nations and beyond, which should be multilateral, multidisciplinary, to account for the multidimensionality of data, and multi-stakeholder in a meaningful manner.

⁶ <https://unctad.org/webflyer/digital-economy-report-2021>.

II. Implementation and follow-up at the regional level

A. Africa

16. The ECA Digital Centre for Excellence supports the development of national ICT strategies and digital identity systems in a number of countries. The African Union has focused on education, agriculture and health within the framework of its digital transformation strategy, and launched a continental data policy framework, to maximize the developmental use of data and address cybersecurity.⁷ The High-Level Panel on Emerging Technologies is preparing a report on artificial intelligence in Africa, with guidelines to maximize the potential of artificial intelligence on the continent.⁸ The Policy and Regulation Initiative for Digital Africa is a joint project of the African Union, the European Union and ITU that aims to foster universally accessible and affordable broadband across the continent.⁹ African Internet Governance Forum 2022 was held in Malawi under the theme of “digital inclusion and trust in Africa”.¹⁰ Finally, under the auspices of UNESCO, 17 countries in Africa have undertaken or initiated assessments of Internet universality indicators.¹¹

B. Asia and the Pacific

17. ESCAP endorsed a new action plan for implementing the Asia-Pacific Information Superhighway initiative, focused on regional cooperation towards connectivity for all, data and digital technology and applications.¹² ESCAP organized a digital transformation forum and ministerial conference and published the first digital transformation report for the region, exploring the impact of the pandemic in expediting digital adoption, considering the high levels of digital inequality and advocating action to strengthen infrastructure, promote digital applications and digital literacy and enhance data use and management.¹³ Further research considered the impact of the pandemic on socioeconomic development in the region.¹⁴

C. Western Asia

18. ESCWA promotes development in online services and infrastructure in the Arab region. A new manual on national digital development reviews focuses on strategic plans, infrastructure, governance, the digital economy, social inclusion and culture and media.¹⁵ The League of Arab States is leading the development of an Arab digital agenda and ICT strategy for 2023–2033, with the support of ESCWA; and collaborating with ESCWA, ITU and other United Nations entities, to support the Arab International Digital Cooperation and Development Forum, aimed at shaping the digital future.¹⁶

D. Europe

19. ECE coordinates the United Nations Centre for Trade Facilitation and Electronic Business, which develops trade facilitation recommendations and electronic standards for

⁷ <https://au.int/en/documents/20200518/digital-transformation-strategy-africa-2020-2030>;
<https://au.int/en/documents/20220728/au-data-policy-framework>.

⁸ <https://www.nepad.org/news/african-union-artificial-intelligence-continental-strategy-africa>.

⁹ <https://au.int/fr/node/38115>.

¹⁰ <https://afifg.africa/afifg-2022-summary/>.

¹¹ <https://www.unesco.org/en/internet-universality-indicators>.

¹² ESCAP/CICTSTI/2022/INF/1.

¹³ <https://www.unescap.org/events/2022/asia-pacific-digital-ministerial-conference-2022-shaping-our-common-future-and-asia>; <https://repository.unescap.org/handle/20.500.12870/4725>.

¹⁴ <https://www.unescap.org/kp/2022/digital-divide-and-covid-19-impact-socioeconomic-development-asia-and-pacific>.

¹⁵ <https://www.unescwa.org/publications/national-digital-developmet-reviews-manual-2021>.

¹⁶ <https://ada.unescwa.org/en>; <https://www.unescwa.org/events/digital-cooperation-and-development-forum>.

government and commercial activity; and supports the sharing of information on environmental issues.¹⁷ The Council of Europe has prioritized work on freedom of expression and the implications of artificial intelligence for human rights. The European Commission reached agreement on the Digital Services Act and the Digital Markets Act, intended to provide a regulatory framework for digital rights and innovation.¹⁸ In addition, the European Commission conducted work on cyberdefence.¹⁹

E. Latin America and the Caribbean

20. ECLAC serves as the technical secretariat for the digital agenda for Latin America and the Caribbean agreed by regional ministers in 2020; the current iteration aims to consolidate a common vision for digital development.²⁰ Regional ministers held a preparatory meeting to develop the next iteration, which will focus on connectivity and capabilities, sustainable digital economy, social welfare and development of a regional digital market.²¹ ECLAC leads the development of a digital economy observatory, to develop metrics and identify research priorities, and supported the development of digital markets in subregions.²²

III. Implementation and follow-up at the international level

A. United Nations Group on the Information Society

21. The Group coordinates the inter-agency implementation of WSIS outcomes across the United Nations system; in 2022, the Group met during WSIS Forum 2022 and contributed to the high-level political forum on sustainable development.²³

B. General Assembly and Economic and Social Council

22. The General Assembly adopted a resolution on information and telecommunications in the context of international security.²⁴ The Economic and Social Council has adopted a resolution on the role of digital technologies in a socially just transition towards sustainable development.²⁵ In 2025, the General Assembly will undertake a comprehensive review of progress made since WSIS.

C. Commission on Science and Technology for Development

23. At its twenty-fifth session, the Commission on Science and Technology for Development focused on industry 4.0 for inclusive development; science, technology and innovation for sustainable urban development in a post-pandemic world; progress made in the implementation of and follow-up to the outcomes of WSIS; and science, technology and innovation for development.²⁶ During the intersessional panel meeting, the Commission

¹⁷ <https://unece.org/shared-environmental-information-system>.

¹⁸ <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package>.

¹⁹ https://ec.europa.eu/commission/presscorner/detail/en/IP_22_6642.

²⁰ <https://repositorio.cepal.org/handle/11362/46440>.

²¹ <https://www.cepal.org/es/eventos/reunion-preparatoria-la-octava-conferencia-ministerial-la-sociedad-la-informacion-america>.

²² <https://www.cepal.org/es/proyectos/observatorio-regional-desarrollo-digital>;
<https://www.cepal.org/es/eventos/seminario-papel-mercosur-la-promocion-comercio-electronico-transfronterizo-la-construccion>; <https://repositorio.cepal.org/handle/11362/47354>.

²³ <https://www.itu.int/net4/wsis/ungis/Articles/View/1203>.

²⁴ A/RES/77/36.

²⁵ E/RES/2021/10.

²⁶ E/CN.16/2022/2; E/CN.16/2022/3; E/CN.16/2022/15; E/CN.16/2022/16.

focused on clean technology and science, technology and innovation with regard to ensuring safe water and sanitation.²⁷

D. Facilitation and coordination of multi-stakeholder implementation

24. WSIS Forum 2022 was held under the theme of “ICTs for well-being, inclusion and resilience”. Over 30,000 participants from 150 countries took part in over 250 online sessions held over a 12-week period. Sessions were focused on the needs of youth, the elderly and people with disabilities, emerging digital technologies and ICTs for well-being and happiness. High-level policy sessions during a week of in-person meetings focused on issues such as digital divides, confidence and security, climate change and the digital economy, and speakers emphasized the importance of an inclusive and effective review process for WSIS beyond 2025, taking into account new developments in technology and policy.²⁸ Over 1,000 initiatives that leverage ICTs for developmental outcomes were added to the WSIS stocktaking platform.²⁹ Regional stocktaking reports were accompanied by a special report on pandemic response.³⁰ The meeting of the Broadband Commission in June 2022 focused on driving inclusive digital transformation, and working groups of the Commission addressed smartphone access, artificial intelligence capacity-building, connectivity for microenterprises and small and medium-sized enterprises, data for learning and virtual health and care.³¹

E. Civil society, business and multi-stakeholder partnerships

25. There has been continued growth in the number of civil society and multi-stakeholder organizations and initiatives concerned with digital opportunities and risks. Access Now organized the multi-stakeholder Rights Conference, focused on human rights in the digital age. APC is an international network of civil society organizations concerned with development, the environment, rights and gender and, in *Global Information Society Watch 2021–2022*, focused on digital responses to the pandemic.³² Digital Public Goods Alliance, a multi-stakeholder initiative, seeks to accelerate achievement of the Sustainable Development Goals in low-income and middle-income countries by facilitating the development of, investment in and the use of digital public goods. The Diplo Foundation provides opportunities for dialogue on digital policy and promotes digital diplomacy.³³ End Child Prostitution in Asian Tourism International is a global civil society network addressing child sexual exploitation and advocating for children’s rights. GSMA represents mobile communications businesses and has published research on the deployment of mobile communications and their impacts on and value for development. IFLA promotes digital access through libraries.³⁴ The Internet Corporation for Assigned Names and Numbers coordinates the domain name system of the Internet. ISOC works with the technical community to develop global infrastructure, support Internet security, train community members and campaign on Internet-related issues.³⁵

²⁷ <https://unctad.org/meeting/cstd-2022-2023-inter-sessional-panel>.

²⁸ <https://www.itu.int/net4/wsis/forum/2022/Home/Outcomes>.

²⁹ <https://www.itu.int/net4/wsis/stocktaking/Home/Reporting>.

³⁰ <https://www.itu.int/net4/wsis/stocktaking/Surveys/Surveys/Submit/15863048637525604>.

³¹ <https://broadbandcommission.org/broadband-commission-urges-faster-global-action-on-digital-development/>; <https://broadbandcommission.org/working-groups/>.

³² <https://www.giswatch.org/2021-2022-digital-futures-post-pandemic-world>.

³³ <https://www.diplomacy.edu/topics/digital-diplomacy/>.

³⁴ <https://librarymap.ifla.org/map/Metric/Libraries-with-Internet-Access/LibraryType/National-Libraries,Academic-Libraries,Public-Libraries,Community-Libraries,School-Libraries,Other-Libraries/Weight/Totals-by-Country>.

³⁵ <https://www.internetsociety.org/action-plan/2022>.

F. Action lines and selected implementation of activities of United Nations entities

1. Implementation of action lines

26. Implementation of WSIS outcomes is aligned with implementation of the 2030 Agenda for Sustainable Development through General Assembly resolutions 70/1 and 70/125. In 2005, 11 action lines were agreed for multi-stakeholder implementation of the outcomes. Action line facilitators review implementation annually using an agreed matrix of the action lines and the Goals.³⁶ A meeting of facilitators was held during WSIS Forum 2022.

(a) *The role of public governance authorities and all stakeholders in the promotion of information and communications technologies for development (C1)*

27. The Office of the Secretary-General's Envoy on Technology has a coordinating role with regard to digital issues in the United Nations system, including open-source technologies, and has focused on implementing *Road Map for Digital Cooperation* and preparations for the global digital compact. The Equals Global Partnership of United Nations entities and sectoral agencies seeks to close gender-related digital divides in ICT access and leadership. The Action Coalition on Technology and Innovation for Gender Equality emphasizes the need to ensure gender equality in the global digital compact by adopting a feminist approach.³⁷

28. Many entities have considered the implications for digital development of the pandemic, as well as international concerns about conflicts, climate change and reduced economic growth. ITU held a round table of economic experts on the role of Governments and the public sector in the post-pandemic digital world.³⁸ The United Nations Office on Drugs and Crime works with Governments to implement the Convention against Transnational Organized Crime, including with regard to the criminal use of digital technology. The World Intellectual Property Organization coordinates international action and provides capacity development on copyright and intellectual property.

29. OECD published *Assessing National Digital Strategies and Their Governance*.³⁹ In addition, OECD hosts the Global Partnership on Artificial Intelligence, which promotes the responsible development of artificial intelligence based on human rights, inclusion, diversity, innovation and economic growth.

(b) *Information and communication infrastructure (C2)*

30. The meeting of action line facilitators at WSIS Forum 2022 focused on network innovation for connecting remote communities.⁴⁰ The use of low Earth orbit satellites is beginning to lower the cost of broadband in rural areas. ITU maps the development of broadband infrastructure and, in *Global Connectivity Report*, provided a detailed assessment of the current state of connectivity and proposed ways to reach the unconnected.⁴¹ The Broadband Commission followed up on the report on twenty-first century financing models for bridging broadband connectivity gaps, and *The State of Broadband 2022* tracks progress towards advocacy targets for broadband connectivity.⁴²

31. The deployment of community networks for underserved communities was promoted by stakeholders, including APC and ISOC, which published *Community Network Readiness*

³⁶ <https://www.itu.int/net4/wsis/sdg/>.

³⁷ <https://forum.generationequality.org/news/unga77-launching-year-action-build-more-equal-and-inclusive-digital-societies-through-multi>.

³⁸ https://www.itu.int/hub/publication/d-pref-ef-gov_ps-01-2021/.

³⁹ <https://www.oecd.org/digital/assessing-national-digital-strategies-and-their-governance-baffceca-en.htm>.

⁴⁰ <https://www.itu.int/net4/wsis/forum/2022/Agenda/Session/414>.

⁴¹ <https://www.itu.int/en/ITU-D/Technology/Pages/InteractiveTransmissionMaps.aspx>;
<https://www.itu.int/hub/publication/d-ind-global-01-2022/>.

⁴² <https://broadbandcommission.org/publication/21st-century-financing-models/>;
<https://www.broadbandcommission.org/publication/state-of-broadband-2022/>.

Assessment Handbook.⁴³ GSMA, in *The State of Mobile Internet Connectivity Report*, provides a detailed analysis of current mobile broadband coverage and mobile Internet adoption.⁴⁴ The Internet Corporation for Assigned Names and Numbers launched the Coalition for Digital Africa, on infrastructure development.⁴⁵

(c) *Access to information and knowledge (C3)*

32. The United Nations Round Table on Digital Inclusion published a preliminary definition of digital inclusion as equitable, meaningful and safe access to use, lead and design digital technologies, services and associated opportunities for everyone, everywhere; together with an analysis of interpretation and measurement requirements.⁴⁶ ESCWA promotes accessibility initiatives through the Arab Digital Inclusion Platform.⁴⁷ ITU and the Office of the Secretary-General's Envoy on Technology set targets for meaningful universal access; and launched an action framework and pledge platform for the Partner 2 Connect Digital Coalition, a multi-stakeholder alliance focused on meaningful connectivity, in particular in the least developed countries, landlocked developing countries and small island developing States, which has mobilized over \$25 billion since its launch.⁴⁸ The Broadband Commission published *Strategies towards Universal Smartphone Access*.⁴⁹ UNESCO held the International Day for Universal Access to Information, at which participants adopted the Tashkent declaration on universal access to information, addressing opportunities and challenges in the digital age.⁵⁰

33. The Alliance for Affordable Internet published a report advancing the concept of meaningful connectivity, including fast broadband, smartphone ownership and daily use and unlimited access to the Internet, and an assessment of geographic barriers and policy strategies for rural communities.⁵¹

34. GSMA, through a consumer insights survey, mapped mobile Internet usage in developed and developing markets; in *The Mobile Gender Gap Report 2022*, noted that a substantial gap in mobile adoption remained between women and men in lower-income countries; explored policy considerations and made recommendations related to connectivity, affordability, digital skills, safety and content requirements; and supported digital and financial inclusion through its Connected Women programme.⁵²

(d) *Capacity-building (C4)*

35. The Office of the Secretary-General's Envoy on Technology launched a multi-stakeholder network on digital cooperation, to promote holistic approaches to capacity development and share knowledge. ECA supports training for digital transformation, and launched the African Research Centre on Artificial Intelligence.⁵³ ITU and UNDP established a Joint Facility for Digital Capacity Development, to support *Road Map for Digital*

⁴³ <https://www.apc.org/en/news/community-networks-can-be-missing-piece-bridge-digital-divide>;
<https://www.internetsociety.org/resources/doc/2022/community-network-readiness-assessment-handbook/>.

⁴⁴ <https://www.gsma.com/r/somic/>.

⁴⁵ <https://intgovforum.org/en/content/igf-2022-town-hall-98-launch-of-the-coalition-for-digital-africa>.

⁴⁶ <https://www.un.org/techenvoy/content/digital-inclusion>.

⁴⁷ <https://www.unescwa.org/arab-digital-inclusion-platform>.

⁴⁸ <https://www.itu.int/en/mediacentre/Pages/PR-2022-04-19-UN-targets-universal-meaningful-connectivity.aspx>; <https://www.itu.int/itu-d/sites/partner2connect/>.

⁴⁹ <https://www.broadbandcommission.org/publication/strategies-towards-universal-smartphone-access/>.

⁵⁰ <https://unesdoc.unesco.org/ark:/48223/pf0000383211>.

⁵¹ <https://a4ai.org/research/advancing-meaningful-connectivity-towards-active-and-participatory-digital-societies/>; <https://a4ai.org/research/meaningful-connectivity-rural-report/>.

⁵² <https://www.gsmaintelligence.com/product-news/latest-consumer-insights-survey-mapping-mobile-internet-use>; <https://www.gsma.com/r/gender-gap/>;
<https://www.gsma.com/mobilefordevelopment/resources/policy-considerations-to-accelerate-digital-inclusion-for-women-in-low-and-middle-income-countries/>;
<https://www.gsma.com/mobilefordevelopment/connected-women/>.

⁵³ <https://www.un.org/africarenewal/magazine/march-2022/africas-first-ai-research-centre-launched-brazzaville-congo>.

Cooperation; ITU and Cisco Systems launched the Digital Transformation Centres initiative, to deliver basic skills training and digital literacy;⁵⁴ and the ITU Academy provides online training for professionals on information and communications issues, and agreed on a new programme for training centres, to begin in 2023. The UNESCO global course on artificial intelligence and the rule of law is an online training course for judicial operators.⁵⁵ The GSMA mobile internet skills training toolkit provides resources for improving the effective use of the Internet by individuals.⁵⁶

(e) *Building confidence and security in the use of information and communications technologies (C5)*

36. APC prepared a toolkit to support gender-responsive cybersecurity.⁵⁷ The Council of Europe continued to address cybercrime under the Budapest Convention.⁵⁸ ECA co-organized the Cybersecurity Summit with the Government of Togo, at which participants adopted the Lomé declaration on cybersecurity and fight against cybercrime.⁵⁹ ITU and partners revised *Guide to Developing a National Cybersecurity Strategy*; ITU published the latest edition of the global cybersecurity index; and ITU and Stanford University collaborated on the digital currency global initiative, to measure and develop policies on digital currencies.⁶⁰ The Open-ended Working Group on Developments in the Field of Information and Telecommunications in the Context of International Security, in its report, explored cyberthreats, norms, confidence-building measures and the potential for continued international dialogue.⁶¹ The World Economic Forum reviewed the global outlook for cybersecurity.⁶²

(f) *The enabling environment (C6)*

37. The Athens Round Table discussed issues related to artificial intelligence and the rule of law. ITU, through the ICT regulatory tracker, monitors regulatory developments worldwide; and published *The Impact of Policies, Regulation and Institutions on ICT Sector Performance*.⁶³ The Global Symposium for Regulators focused on regulation for a sustainable digital future and the Global Standards Symposium considered international standards to enable digital transformation, to support the achievement of the Sustainable Development Goals. The Broadband Commission, in *The State of Broadband 2022*, examined the implications of the pandemic on regulatory innovation and collaboration. The United Nations Global Pulse works with partners to accelerate sustainable development and the responsible use of big data and artificial intelligence. UNESCO published a guide for policymakers, identifying building blocks for inclusive policy design for the multi-stakeholder development of artificial intelligence.⁶⁴ The World Bank supports the development of regulatory agencies and policies on universal access, competition, interoperability and other regulatory challenges. The World Economic Forum published *State of Quantum Computing*.⁶⁵

⁵⁴ <https://academy.itu.int/itu-d/projects-activities/digital-transformation-centres-initiative>.

⁵⁵ <https://www.unesco.org/en/artificial-intelligence/rule-law/mooc-judges>.

⁵⁶ <https://www.gsma.com/mobilefordevelopment/mistt/>.

⁵⁷ <https://www.apc.org/en/pubs/why-gender-matters-international-cyber-security>.

⁵⁸ <https://www.coe.int/en/web/cybercrime/the-budapest-convention>.

⁵⁹ <https://sommetybersecritelome.com/en/>.

⁶⁰ https://www.itu.int/pub/D-STR-CYB_GUIDE.01; <https://www.itu.int/en/ITU-Textcoop/dcgi/Pages/default.aspx>.

⁶¹ A/75/816.

⁶² <https://www.weforum.org/reports/global-cybersecurity-outlook-2022/>.

⁶³ <https://app.gen5.digital/tracker/about>; https://www.itu.int/pub/D-PREF-EF.ICT_SECT_PERF-2021.

⁶⁴ <https://unesdoc.unesco.org/ark:/48223/pf0000382570>.

⁶⁵ <https://www.weforum.org/reports/state-of-quantum-computing-building-a-quantum-economy/>.

(g) *Information and communications technology applications (C7)*

E-government

38. The Broadband Commission analysed the competencies required by civil servants with regard to artificial intelligence and the digital transformation.⁶⁶ DESA, in *United Nations E-Government Survey 2022*, noted continued growth in electronic government (e-government) services in all regions, at both the local and national levels, and emphasized the need for connectivity and a renewed focus on inclusion, to ensure that all citizens gain from digital services.⁶⁷ The Digital Impact Alliance oversees the Gov Stack initiative, for accelerating the digital transformation of government services. OECD published policy recommendations to foster the economic and social impact of open government in Arab countries.⁶⁸ The United Nations University facilitated the fifteenth International Conference on Theory and Practice of Electronic Governance.⁶⁹ The World Bank published reports on the migration of government services to cloud-based platforms and the role of digital technologies in pandemic-related social assistance responses.⁷⁰

E-business

39. UNCTAD reported continued but unequal growth in e-commerce, with the largest online platforms benefiting most from increased use during the pandemic. The fifth session of the Intergovernmental Group of Experts on E-commerce and the Digital Economy focused on pandemic recovery in an increasingly digital economy. E-Commerce Week 2022 focused on data and digitalization for development and attracted over 2,500 participants from over 130 countries.⁷¹ UNCTAD continued to undertake e-trade readiness assessments in developing countries, complementing outcomes through the implementation support mechanism.⁷² The eTrade for all partnership, coordinated by UNCTAD, promotes more effective support by the international community, for developing countries to be better equipped to engage in and benefit from e-commerce.

40. ECA and the African Continental Free Trade Area Secretariat launched the Africa Trade Exchange platform and a Pan-African Payment and Settlement System, to strengthen regional supply chains through digital trade.⁷³ ECLAC published reports on e-commerce and supported the capacity development of small and medium-sized enterprises in the region.⁷⁴ The International Trade Centre and the Universal Postal Union provided training for small and medium-sized enterprises and postal services, respectively. The Broadband Commission working group on connectivity for microenterprises and small and medium-sized enterprises is examining digital connectivity. The United Nations Industrial Development Organization supports the uptake of new technologies in developing countries and the increased focus on enhancing innovation ecosystems concerned with artificial intelligence and on cybersecurity.

41. The World Trade Organization continued to hold discussions on e-commerce and trade in knowledge; published, jointly with the World Economic Forum, *Policy Approaches*

⁶⁶ <https://www.broadbandcommission.org/publication/artificial-intelligence-and-digital-transformation/>.

⁶⁷ <https://desapublications.un.org/publications/un-e-government-survey-2022>.

⁶⁸ <https://www.oecd.org/fr/publications/the-economic-and-social-impact-of-open-government-6b3e2469-en.htm>.

⁶⁹ <https://egov.unu.edu/events/archive/conference/icegov-2022.html#overview>.

⁷⁰ <https://www.worldbank.org/en/events/2022/06/12/government-migration-to-cloud-ecosystems-wbg>;
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099830009302217091/p1731660f8c52f062092ac00d53c648bac7>.

⁷¹ <https://unctad.org/topic/ecommerce-and-digital-economy/ecommerce-week>.

⁷² <https://unctad.org/webflyer/fast-tracking-implementation-etradereadinessassessments-second-edition>.

⁷³ <https://www.uneca.org/stories/africa-trade-exchange-%28atex%29-platform-launched-to-facilitate-trading-under-the-afcfta>; <https://www.trade.gov/market-intelligence/pan-african-payment-and-settlement-system>.

⁷⁴ <https://repositorio.cepal.org/handle/11362/47183>.

to *Harness Trade Digitalization*; and included digital connectivity, e-commerce and sustainable trade as major themes in *Aid for Trade Global Review 2022*.⁷⁵

42. GSMA, in *State of the Industry Report on Mobile Money*, described the continued growth of mobile money following the pandemic.⁷⁶

E-learning

43. The Transforming Education Summit, held during the General Assembly as a contribution to *Our Common Agenda*, the report of the Secretary-General, reinforced the commitment to connect every child and young person to digital solutions and stressed the need for high-quality content and teacher training, alongside connectivity, in enabling e-learning, as well as the role of open educational resources.⁷⁷

44. ITU published a report on the digital transformation of education.⁷⁸ ITU and UNICEF through the global Giga initiative, aim to map school connectivity and connect every school to the Internet.⁷⁹ The Broadband Commission working group on data for learning prepared an interim report. The Commission on the Status of Women is will consider, as part of its work, education and gender equality in the digital age.

45. UNESCO, in *The Rewired Global Declaration on Connectivity for Education*, emphasized the need to include marginalized groups in digital development, expand investment in open and high-quality digital education content and foster innovation in teaching practice, alongside digital innovation.⁸⁰ UNESCO and UNICEF launched the Gateways to Public Digital Learning partnership, to strengthen platforms and content.⁸¹

E-health

46. Recovery from the pandemic was a major theme of the high-level political forum on sustainable development, including the role of digital technologies and enabling a renewed focus on health-related Sustainable Development Goals.⁸²

47. The Broadband Commission published *The Future of Virtual Health and Care* and a report on global cooperation in future epidemic management.⁸³

48. WHO, in *Global Strategy for Digital Health 2020–2025*, highlighted the appropriate use of digital technologies through national strategies, stronger governance and people-centred initiatives; the focus in 2022 was on global health threats, including efforts to enhance monitoring and surveillance data, to enable early warning and facilitate responses.⁸⁴ The Global Health Observatory provides comprehensive access to health data for policymakers. The Digital Health Centre of Excellence, co-led by WHO and UNICEF, works to improve donor coordination and provide targeted assistance, to address national health priorities.

E-employment

49. ILO, in *World Employment and Social Outlook: Trends 2022*, stated that accelerated technological change during and since the pandemic was exacerbating digital divides in

⁷⁵ https://www.wto.org/english/res_e/publications_e/tradeinknowledgepub22_e.htm;
<https://www.weforum.org/reports/the-promise-of-tradetech-policy-approaches-to-harness-trade-digitalization/>; https://www.wto.org/english/tratop_e/devel_e/a4t_e/a4tpublicationgr22_e.htm.

⁷⁶ <https://www.gsma.com/sotir/>.

⁷⁷ <https://www.un.org/en/transforming-education-summit/about>;
<https://transformingeducationsummit.sdg4education2030.org/TESEFollowUp>.

⁷⁸ <https://www.itu.int/hub/publication/s-pol-broadband-22-2020/>.

⁷⁹ <https://giga.global/about-us/>; <https://projectconnect.unicef.org/map>.

⁸⁰ <https://unesdoc.unesco.org/ark:/48223/pf0000381482.locale=en>.

⁸¹ <https://www.un.org/en/transforming-education-summit/gateways-public-digital-learning>.
E/HLS/2022/1.

⁸² <https://broadbandcommission.org/publication/the-future-of-virtual-health-and-care/>;
<https://broadbandcommission.org/publication/epidemic-management/>.

⁸⁴ <https://apps.who.int/iris/handle/10665/344249>; <https://www.who.int/emergencies/surveillance>.

employment; reported on and held an expert meeting on decent work in the platform economy; and reported on the implications of digital employment for social protection.⁸⁵

50. UNESCO, OECD and the Inter-American Development Bank published *The Effects of Artificial Intelligence on the Working Lives of Women*.⁸⁶

51. The online labour index, launched at the Oxford Internet Institute, tracks online labour markets.

E-environment

52. A working group of the Parties to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) discussed developments in access to environmental information.⁸⁷

53. APC published a guide to a circular economy for digital devices.⁸⁸

54. The Coalition for Digital Environment Sustainability published *Action Plan for a Sustainable Planet in the Digital Age*, focused on accelerating innovation, enabling collaborative alignment and mitigating the negative impacts of digitalization.⁸⁹

55. The Digital Public Goods Alliance issued recommendations on improving weather-related, climate-related and hydrological data, to facilitate mitigation and adaptation.⁹⁰

56. ECE supports digital environmental information systems and provides guidelines and capacity-building in areas such as land management and pollution monitoring.

57. The Emergency Telecommunications Cluster enabled the increased use of ICTs, to address natural and artificial disasters and build community resilience, and developed a model to assess the benefits of investment in emergency telecommunications preparedness.⁹¹

58. The E-Waste Coalition brings together United Nations entities, to advocate, share knowledge and support the implementation of strategies to deal with e-waste.⁹²

59. ITU and the World Benchmarking Alliance reviewed the emissions and climate-related targets of 150 digital businesses.⁹³ ITU maintains a toolkit on digital transformation for people-oriented cities and communities and a portal on the environment and smart sustainable cities.⁹⁴ ITU and the United Nations Institute for Training and Research consulted on ways to monitor e-waste legislation.⁹⁵

60. UNEP summarized the growing environmental footprint of digitalization; through the Digital Transformation programme, focuses on supporting environmental sustainability through applying data and digital technologies, shifting markets and consumer behaviour and enhancing environmental digital literacy and governance; promotes digital approaches to

⁸⁵ <https://www.ilo.org/global/research/global-reports/weso/trends2022/lang--en/index.htm>;
https://www.ilo.org/travail/eventsandmeetings/WCMS_852196/lang--en/index.htm;
<https://www.ilo.org/global/research/global-reports/world-social-security-report/2020-22/lang--en/index.htm>.

⁸⁶ <https://unesdoc.unesco.org/ark:/48223/pf0000380861?posInSet=1&queryId=2400acd2-aa16-4ac3-a687-09528096b318>.

⁸⁷ <https://unece.org/env/pp/wgp/>.

⁸⁸ <https://circulartech.apc.org/books/a-guide-to-the-circular-economy-of-digital-devices>.

⁸⁹ <https://www.unep.org/resources/report/action-plan-sustainable-planet-digital-age>.

⁹⁰ <https://digitalpublicgoods.net/blog/dpga-itu-and-wmo-call-for-weather-climate-and-hydrological-datasets-to-be-dpgs/>.

⁹¹ <https://www.etcluster.org/document/return-investment-roi-model>.

⁹² <https://unemg.org/our-work/emerging-issues/innter-agency-issue-management-group-on-tackling-e-waste/>.

⁹³ <https://www.itu.int/hub/publication/d-str-digital-03-2022/>.

⁹⁴ <https://toolkit-dt4c.itu.int/modules/>; <https://www.itu.int/en/ITU-T/climatechange/resources/Pages/env-and-ssc.aspx>.

⁹⁵ https://globalewaste.org/wp-content/uploads/2022/05/CONSUL_1.pdf.

monitoring air and water quality, as well as climate change; and published a guide to a circular economy for the electronics sector.⁹⁶

61. The United Nations United for Smart Sustainable Cities initiative developed key performance indicators used by over 150 cities to assess progress; and published a report on integrated city management and *A New Architecture for Sustainable, Digital Development*.⁹⁷

62. The World Economic Forum published a report on the use of digital technology in sustainable urban development and a framework for digital transformation in small and medium-sized cities.⁹⁸

63. The World Meteorological Organization information system, featuring meteorological and hydrological data and analysis, is being upgraded to improve collaboration and information-sharing.

E-agriculture

64. FAO, in *Strategic Framework 2022–31*, recognized the growing significance of digital technologies in agriculture; reviewed the status of digital agriculture in sub-Saharan Africa; published *Digital Innovation Strategy for Agrifood Systems in Africa*, addressing the risk that rapid advances in digital technology may exacerbate digital divides; and reviewed digital excellence in agriculture in Central Asia and Europe.⁹⁹ In addition, FAO facilitates the e-agriculture community of practice, for sharing knowledge of agriculture and rural development, and supports the development of e-agriculture strategies in developing countries. The Digital Village Initiative addresses rural hunger, poverty and inequality in Asia and the Pacific and the Data in Emergencies Hub provides information on food insecurity in fragile environments.

65. ECLAC published a report on digitalization and technological change in agro-industry in Latin America and the Caribbean.¹⁰⁰ ITU published *Digital Agriculture in Action: Artificial Intelligence for Agriculture*.¹⁰¹

E-science

66. The Commission on Science and Technology for Development held a round table on the role of science, technology and innovation in recovering from the pandemic and advancing progress on the Sustainable Development Goals. FAO, the International Labour Organization, UNEP, WHO and the World Intellectual Property Organization collaborate with publishers in the Research for Life programme, which offers access for developing countries to scientific journals, books and databases. The UNESCO General Conference adopted a recommendation on open science; UNESCO maintains the Global Observatory of Science, Technology and Innovation Policy Instruments and is exploring the wider ecosystem of access to scientific knowledge.

⁹⁶ <https://www.unep.org/resources/emerging-issues/growing-footprint-digitalisation>;
<https://www.unep.org/explore-topics/technology/what-we-do/digital-transformation>;
<https://www.unep.org/news-and-stories/story/how-digital-technology-and-innovation-can-help-protect-planet>; <https://www.unep.org/resources/report/towards-circular-economy-electronics-sector-africa-overview-actions-and>.

⁹⁷ <https://www.itu.int/en/ITU-T/ssc/united/Pages/publications-U4SSC.aspx>;
<https://www.itu.int/hub/publication/t-tut-smartcity-2022-05/>.

⁹⁸ <https://www.weforum.org/reports/using-digital-technology-for-a-green-and-just-recovery-in-cities/>;
<https://www.weforum.org/reports/shaping-the-future-of-small-and-medium-sized-cities-a-framework-for-digital-transformation/>.

⁹⁹ <https://www.fao.org/strategic-framework/en>; <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1476537/>; <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1475335/>; <https://www.fao.org/documents/card/en/c/cb6098en/>.

¹⁰⁰ <https://repositorio.cepal.org/handle/11362/46965>.

¹⁰¹ https://www.itu.int/hub/publication/d-str-e_agricult-05-2021/.

(h) *Cultural diversity and identity, linguistic diversity and local content (C8)*

67. The United Nations Legal Identity Agenda Task Force is coordinated by DESA, UNDP and UNICEF.

68. The declaration of the UNESCO World Conference on Cultural Policies and Sustainable Development focused on shaping a more robust and resilient cultural sector in the context of global change and the digital transition.¹⁰² UNESCO published *Reshaping Policies for Creativity: Addressing Culture as a Global Public Good* and worked with the European Union to support regulatory frameworks for strengthening cultural and creative industries; the Digital Creativity Lab, supported by the Republic of Korea, addresses skill gaps and policy requirements in this sector.¹⁰³ UNESCO and IFLA, in a public library manifesto, emphasized the role of libraries in promoting culture, disseminating information and enabling digital transformation.¹⁰⁴ The International Decade of Indigenous Languages includes a focus on multilingual information services and content.¹⁰⁵ UNESCO and ITU, during WSIS Forum 2022, organized a hackathon on ICTs for the preservation, revitalization and promotion of indigenous languages.¹⁰⁶

69. The World Bank provides resources, including principles, and supports the design and implementation of identification and civil registration systems in over 50 countries.¹⁰⁷

(i) *Media (C9)*

70. The Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression reported on reinforcing media freedom and the safety of journalists in the digital age and on disinformation and freedom of opinion and expression during armed conflicts.¹⁰⁸ The UNDP i-verify tool helps countries deal with misinformation and hate speech during elections.¹⁰⁹ UNESCO, in *Journalism is a Public Good: World Trends in Freedom of Expression and Media Development*, noted challenges arising from changing technology and media, including the loss of advertising revenue, and that, over the past five years, approximately 85 per cent of the world's population had experienced a decline in press freedom in their country.¹¹⁰ The World Press Freedom Day Global Conference addressed the impact of the digital era on freedom of expression, the safety of journalists, privacy and access to information.¹¹¹

71. The International Fund for Public Interest Media seeks to sustain independent media and investigative journalism in a context of political threats and financial challenges.

(j) *Ethical dimensions of the information society (C10)*

72. The Office of the Secretary-General's Envoy on Technology coordinates the United Nations Inter-Agency Dialogue on Disinformation and Data Transparency.¹¹² The United Nations marked the first International Day for Countering Hate Speech, building on the related strategy and plan of action.¹¹³ The Office of the United Nations High Commissioner for Human Rights published a practical guide on using digital open source and information

¹⁰² <https://www.unesco.org/en/articles/mondiaucult-2022-states-adopt-historic-declaration-culture?hub=701>.

¹⁰³ <https://unesdoc.unesco.org/ark:/48223/pf0000380474>;
<https://en.unesco.org/creativity/activities/supporting-new-regulatory-frameworks-strengthen>.

¹⁰⁴ <https://www.ifla.org/g/public-libraries/public-library-manifesto/>.

¹⁰⁵ <https://en.unesco.org/idil2022-2032>.

¹⁰⁶ <https://www.itu.int/net4/wsis/forum/2022/Home/Hackathon>.

¹⁰⁷ <https://id4d.worldbank.org/node/2096>; <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/213581486378184357/principles-on-identification-for-sustainable-development-toward-the-digital-age>.

¹⁰⁸ A/HRC/50/29; A/77/288.

¹⁰⁹ <https://www.undp.org/press-releases/undp-tool-fight-misinformation-scales-globally-digital-public-good>.

¹¹⁰ <https://unesdoc.unesco.org/ark:/48223/pf0000380618>.

¹¹¹ <https://www.un.org/en/observances/press-freedom-day>.

¹¹² <https://www.un.org/techenvoy/content/digital-human-rights>.

¹¹³ <https://www.un.org/en/observances/countering-hate-speech>.

in investigating violations of human rights.¹¹⁴ The Special Rapporteur on the right to privacy analysed principles underpinning privacy and protection of personal data.¹¹⁵

73. ITU published *Ageing in a Digital World*.¹¹⁶ Participants at the Generation Connect Global Youth Summit considered age-related digital divides and impacts.¹¹⁷ The Financial Inclusion Global Initiative explored consumer protection and privacy in the context of big data machine learning.¹¹⁸ UNESCO published a report on the ethical implications of the Internet of things and prepared tools for readiness and ethical impact assessments based on the UNESCO recommendation on the ethics of artificial intelligence.¹¹⁹ UNESCO supports the introduction of freedom of information laws, now enacted in more than 130 countries, and has developed survey methodology to monitor implementation. UNICEF published *Legislating for the Digital Age*, a guide aimed at protecting children from exploitation; *Towards a Child-Centred Digital Equality Framework*; and *Protecting Children in Cyberconflicts*.¹²⁰ The Voices of Youth platform provides an opportunity for young people to contribute ideas on public policy issues. UN-Women emphasized the need to eliminate digital violence against women and girls.¹²¹

74. The Council of Europe implemented a new strategy for the rights of the child, including principles on online rights, and published a report on spyware and impacts on human rights.¹²² In addition, the Council focused on the rights of the elderly in participating in the digital era and adopted recommendations on digital technologies concerned with freedom of expression, election processes and journalism. The Committee on Artificial Intelligence is preparing a convention concerning human rights, democracy and law related to artificial intelligence systems.¹²³

75. The Global Partnership to End Violence against Children, including End Child Prostitution in Asian Tourism International, the International Criminal Police Organization and UNICEF, published a strategy for child protection.¹²⁴

76. The Women's Rights Online Network, supported by the World Wide Web Foundation, published *Gender and ICT Policy Playbook*, advocating gender-responsive ICT policy, and the World Wide Web Foundation published an assessment of digital platform responses to online gender-based violence.¹²⁵

(k) *International and regional cooperation (C11)*

77. The global digital compact proposed in *Our Common Agenda*, the report of the Secretary-General, will be considered at the Summit of the Future.¹²⁶ The Office of the Secretary-General's Envoy on Technology has a coordinating role within the United Nations system in preparations for the global digital compact, with open consultations due to be completed by March 2023, and issued *Implementing the Secretary-General's Road Map for*

¹¹⁴ <https://www.ohchr.org/en/publications/policy-and-methodological-publications/berkeley-protocol-digital-open-source>.

¹¹⁵ A/77/196.

¹¹⁶ https://www.itu.int/hub/publication/d-phcb-dig_age-2021/.

¹¹⁷ <https://www.itu.int/generationconnect/generation-connect-youth-summit-2022/>.

¹¹⁸ <https://www.itu.int/hub/publication/t-tut-dfs-2022-1/>.

¹¹⁹ <https://unesdoc.unesco.org/ark:/48223/pf0000375304>;

<https://unesdoc.unesco.org/ark:/48223/pf0000380455>.

¹²⁰ <https://www.unicef.org/reports/legislating-digital-age>;

<https://www.unicef.org/globalinsight/reports/towards-child-centred-digital-equality-framework>;

<https://www.unicef.org/globalinsight/reports/protecting-children-cyberconflicts>.

¹²¹ A/77/302; <https://www.unwomen.org/en/digital-library/publications/2022/10/accelerating-efforts-to-tackle-online-and-technology-facilitated-violence-against-women-and-girls>.

¹²² https://search.coe.int/cm/pages/result_details.aspx?objectid=0900001680a5a064;

<https://www.coe.int/en/web/freedom-expression/-/pegasus-spyware-and-its-impacts-on-human-rights>.

¹²³ <https://rm.coe.int/terms-of-reference-of-the-committee-on-artificial-intelligence-for-202/1680a74d2f>.

¹²⁴ <https://www.end-violence.org/what-we-do>.

¹²⁵ <https://webfoundation.org/research/gender-and-ict-policy-playbook/>;

<https://webfoundation.org/research/strengthening-accountability-for-online-gender-based-violence-one-year-later/>.

¹²⁶ A/76/L.87.

*Digital Cooperation: July 2022 Update*¹²⁷ The multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals considered the role of global digital public goods as a foundation for development and international cooperation; and noted that the Technology Facilitation Mechanism was a means of facilitating relevant policy discussions.¹²⁸

78. ITU held its quadrennial Plenipotentiary Conference. The ITU World Telecommunication Development Conference was focused on connecting the unconnected to achieve sustainable development and developed the work programme of the development sector for the next four years and, in the Kigali Declaration, elaborated on the commitment of ITU to ICT development, with performance indicators set for priorities, including on affordable connectivity, digital transformation, enabling policy and regulation, resource mobilization and secure ICTs for sustainable development.¹²⁹

79. UNDP, through *Digital Strategy 2022–2025*, seeks to embed digital technologies across the work of the organization, supporting the development of inclusive digital ecosystems and taking advantage of new technological opportunities.¹³⁰

80. Ministers of digital economy of the Group of 20 held discussions on digital transformation, and ministers of digital and technology of the Group of Seven issued a declaration, identifying priority interventions for post-pandemic recovery.¹³¹

81. Under the Global Policy Artificial Intelligence online platform, eight international agencies are cooperating on sharing resources and initiatives concerning human rights, artificial intelligence and sustainable development.¹³²

2. Implementation of themes

(a) *Financing mechanisms*

82. The United Nations, in *Financing for Sustainable Development Report 2022*, discussed the rise of cryptocurrencies, the economic power of digital platforms and the need for cybersecurity in relation to development finance.¹³³ The Capital Development Fund prepares inclusive digital economy scorecards, tracking development in selected countries.

83. The World Bank Group supports digital development through its financing mechanisms, including the International Finance Corporation and the Multilateral Investment Guarantee Agency. Post-pandemic priorities for the World Bank in this sector are set out by the Development Committee.¹³⁴ The World Bank coordinates the Digital Development Partnership, which brings together public and private sector organizations to leverage digital innovation for development; priority work areas include data and indicators, enabling environments for the digital economy, cybersecurity, inclusive Internet access, digital government and mainstreaming digital services, applications and platforms. The Partnership manages projects worth \$3 billion in cumulative commitments.

84. The World Benchmarking Alliance tracks the efforts of business to achieve a more inclusive digital society.

¹²⁷ <https://www.un.org/techenvoy/content/roadmap-digital-cooperation>.

¹²⁸ E/HLPF/2022/6.

¹²⁹ <https://www.itu.int/en/publications/ITU-D/pages/publications.aspx?parent=D-TDC-WTDC-2022&media=electronic>.

¹³⁰ <https://www.undp.org/publications/digital-strategy-2022-2025>.

¹³¹ <http://www.g20.utoronto.ca/2021/210805-digital.html>;

<https://www.gov.uk/government/publications/uk-g7-presidency-statement-digital-and-tech/uk-g7-presidency-statement-digital-and-tech>.

¹³² <https://globalpolicy.ai/en/about/>.

¹³³ <https://developmentfinance.un.org/fsdr2022>.

¹³⁴ https://www.devcommittee.org/sites/dc/files/download/Documents/2022-04/Final%20on%20Digitalization_DC2022-0002.pdf.

(b) *Internet governance*

85. The Tunis Agenda for the Information Society recognized the need for enhanced cooperation on international public policy issues pertaining to the Internet. The General Assembly has noted the work of the Working Group on Enhanced Cooperation of the Commission on Science and Technology for Development and the need for continued dialogue.¹³⁵

86. The *Road Map for Digital Cooperation* proposed improvements to the Internet Governance Forum (IGF), including the establishment of a strategic and empowered multi-stakeholder high-level body, a more focused agenda with ministerial and parliamentary tracks and stronger links between IGF and intersessional activities.¹³⁶ A leadership panel was appointed to address strategic and urgent issues and promote greater impacts from IGF discussions.¹³⁷ DESA organized an expert group meeting to consider the future development of IGF in this context.¹³⁸ The sixteenth meeting of IGF was held as a hybrid event in December 2021, including a physical meeting in Katowice, Poland under the theme of “Internet united”.¹³⁹ More than 10,000 delegates participated in 318 sessions, including a strengthened parliamentary track with over 200 participants and an open forum that included reports on digital activities from United Nations entities.¹⁴⁰ The seventeenth meeting of IGF was held in Addis Ababa in November–December 2022 under the theme of “resilient Internet for a shared sustainable and common future” and subsidiary themes focused on elements of the proposed global digital compact. Policy networks, facilitated by multi-stakeholder working groups, undertook intersessional work in 2021–2022 on meaningful access and Internet fragmentation. Best practice forums addressed cybersecurity and gender and digital rights, and 24 dynamic coalitions undertook intersessional work on a variety of issues. Significant efforts were made to involve under-represented stakeholders in the work of IGF, including capacity-building workshops and the publication of a syllabus for schools.¹⁴¹ National and regional IGFs play a growing part in IGF activity; at present, there are 155 national and regional IGFs and their work feeds into the work of IGF.¹⁴²

(c) *Measuring information and communications technology for development*

87. The Partnership on Measuring ICT for Development brings together 14 United Nations and international entities concerned with data collection and analysis, assesses trends and proposes indicators to improve measurement with regard to the information society; the Partnership revised its core list of ICT indicators, reported on available statistics to the Economic and Social Council and considered ways of leveraging innovative data sources through multi-stakeholder collaboration.¹⁴³

88. ITU maintains the World Telecommunication/ICT Indicators database, which includes data from over 200 economies under more than 180 indicators, with key data summarized in *Global Connectivity Report 2022* and on the digital development dashboard; and reports on the affordability of ICT services.¹⁴⁴ The UNDP digital development compass aggregates data from national indicators, to enable more effective development planning, and the digital readiness assessment tool helps in identifying ways of prioritizing national digital

¹³⁵ A/RES/76/189.

¹³⁶ A/74/821.

¹³⁷ <https://www.intgovforum.org/en/content/terms-of-reference-for-the-igf-leadership-panel;>
<https://www.un.org/sg/en/content/sg/personnel-appointments/2022-08-16/internet-governance-forum-leadership-panel%C2%A0>.

¹³⁸ <https://www.intgovforum.org/en/content/report-from-expert-group-meeting>.

¹³⁹ https://www.intgovforum.org/en/filedepot_download/223/20511.

¹⁴⁰ <https://www.intgovforum.org/en/content/igf-2021-un-open-forum-connecting-the-digital-dots-%E2%80%93-how-the-un-system-is-supporting-the>.

¹⁴¹ <https://www.intgovforum.org/en/content/igf-capacity-development-workshops;>
<https://www.intgovforum.org/en/content/supporting-sigs>.

¹⁴² <https://www.intgovforum.org/en/content/national-and-regional-igf-initiatives>.

¹⁴³ <https://www.itu.int/en/ITU-D/Statistics/Pages/coreindicators/default.aspx>; E/CN.3/2022/21.

¹⁴⁴ [https://www.itu.int/hub/publication/d-ind-global-01-2022/;](https://www.itu.int/hub/publication/d-ind-global-01-2022/) <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>; https://www.itu.int/hub/publication/d-ind-pol_brief-01-01-2022/.

interventions.¹⁴⁵ The UNESCO Internet universality indicators provide a framework for assessing national Internet environments, including with regard to rights, openness, access and multi-stakeholder engagement; national studies are progressing in 44 countries.

89. OECD, through the broadband portal, provides data on connectivity, usage and prices; and updated the Going Digital Measurement Road Map, which provides guidance on measuring the digital transformation.¹⁴⁶

90. The Development Data Partnership seeks to use third-party data in development research through secure data exchanges. The GSMA mobile connectivity index measures mobile infrastructure, affordability, consumer readiness, content and services in 170 countries.

IV. Findings and suggestions

91. The two decades since WSIS have seen a significantly rapid evolution in technology, with dramatic impacts on society, economy and governance. Further digital innovations, including artificial intelligence, machine learning and quantum computing, have placed the world on the cusp of further rapid change. With the right policies in place, digital technology offers new ways of delivering sustainable development, particularly in the poorest countries. The pandemic, in particular, has served to demonstrate the potential of technology to facilitate resilience in the face of crisis. The years since WSIS have also shown that digital technology has broader implications than anticipated at WSIS, including for long-term changes in the structure of societies and economies, as well as with regard to risks to individual welfare, human rights and social stability. Efforts to address both opportunities and risks are highlighted in the initiatives in this report.

92. Three underlying factors pose major challenges to international efforts to maximize the opportunities and mitigate the risks of digital development.

93. First, the continued digital divide. The majority of the world's citizens are now connected, yet many still lack access to the Internet and online services. Many of those who are connected have limited connectivity, which does not offer them the full benefits of digitalization. The lack of affordability, digital skills and relevant content and services also constrains inclusion and equality. As a result, those who are already more advantaged often gain more from digital development than those in greater need. Leaving no one behind, the key message of the 2030 Agenda, is critical in this regard.

94. Second, the relationship between digital development and other aspects of the global society. Digitalization is increasingly central to all aspects of society; it is increasingly difficult to distinguish digital from non-digital approaches in many spheres, and policymakers in all fields need to pay close attention to digital development. The corollary is that digital policymakers also need to pay greater attention to the impact of digital development on other spheres of public policy. Climate change poses an existential threat to humanity, and digital technology contributes to the threat yet also suggests ways in which it might be mitigated. Cybersecurity and conflicts, online and offline, jeopardize both digital and wider human development. The pandemic and the prospect of economic recession have challenged efforts to achieve the Sustainable Development Goals and may well have exacerbated digital divides, along with demonstrating digital resilience.¹⁴⁷

95. Third, the pace of change of technology. Many aspects of the information society have evolved since WSIS, stimulating changes in society and the economy that affect options for the future. Many of these changes are welcomed while others have led to uncertainty and concerns. The pace of digital development now often exceeds the ability to understand it and its implications, to reach consensus on how to shape digital development for the common good and to develop appropriate international norms and national laws or regulations.

¹⁴⁵ <https://www.undp.org/digital/transformations>.

¹⁴⁶ <https://www.oecd.org/digital/the-oecd-going-digital-measurement-roadmap-bd10100f-en.htm>.

¹⁴⁷ <https://www.un.org/sustainabledevelopment/progress-report/>.

96. The evolution of the information society will be reviewed by the General Assembly in 2025. Much analysis is needed before then of the changes that have taken place in technology and connectivity, services and applications, adoption and usage and the ownership and management of digital resources, as well as the impacts of such changes on societies, economies and cultures. Reflecting on developments since WSIS will require an assessment of diverse experiences and of the relationship between digital divides and other inequalities, both between countries and among their populations. Impacts that require assessment include those on the environment and human rights, on gender equality and broader aspects of inclusion, on education and employment and on each of the Sustainable Development Goals. All United Nations entities need to play a part in this, alongside other stakeholders.

97. The most important aspects of assessing the information society lie in the future, however, not in the past, namely, in understanding how the international community can maximize the opportunities of new technology to enable sustainable development, harness its potential to mitigate environmental harms and promote peace and cooperation, support human rights and minimize the risks associated with cybercrime, disinformation and abuse. Shaping the information society for the common good is one of the great opportunities before humanity.

98. Consultations are under way to develop the global digital compact that will be presented at the Summit of the Future in 2024. Its aim is to establish an open, free, inclusive and secure digital future for all, to be agreed by Governments, with input from all other stakeholders, including business, civil society and the technical community, as well as those concerned with the impacts and inputs of digitalization. The consultations provide an opportunity for Governments and other stakeholders to revitalize international cooperation in the light of the dramatic changes that have taken place in digital technology since WSIS and to incorporate the findings of the many international forums that have discussed aspects of the information society since then, both within the United Nations system and beyond. They also provide an opportunity to support recovery from the pandemic and mitigate the threat of economic downturn. Above all, they provide an opportunity to integrate digital development across the Sustainable Development Goals, ahead of the review of the 2030 Agenda that will take place in 2030.
