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|  | **8 October 2021**  |
|  | **Original: English** |
| Director, Telecommunication Development Bureau |
| Reporting on the implementation of the WTDC-17 Buenos Aires Action Plan (including regional initiatives),and contribution to the implementation of theWSIS Plan of Action and the Sustainable Development Goals (SDGs) |
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| **Summary:**The 2017 ITU World Telecommunication Development Conference (WTDC-17) convened in Buenos Aires, Argentina, from 9 to 20 October 2017 and adopted the [Buenos Aires Action Plan](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf) (BAAP). The plan, which includes the ITU-D programmes, a set of regional initiatives, and new and revised resolutions, recommendations and Study Group Questions, defines the mandate, objectives and priorities of the ITU Development Sector (ITU-D) for the period 2018-2021. It also aligns the Development Sector work with the strategic objectives of ITU to allow countries to harness the full benefits of ICTs. This document reports on the implementation of the BAAP from 2018 until September 2021, and its contribution to the implementation of the WSIS Plan of Action and the Sustainable Development Goals (SDGs). It also highlights the change that the Telecommunication Development Bureau (BDT), the executing arm of ITU-D, has undergone to ensure that it is able to keep pace with the fast-changing environment in which it serves.**Action required:**TDAG is invited to examine this report and provide guidance as deemed appropriate.**References:**WTDC-17 Buenos Aires Action Plan  |

# Introduction

The 2017 ITU World Telecommunication Development Conference (WTDC-17) convened in Buenos Aires, Argentina, from 9 to 20 October 2017 and adopted the [Buenos Aires Action Plan](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf) (BAAP). The plan, which includes the ITU-D programmes, a set of regional initiatives, and new and revised resolutions, recommendations and Study Group Questions, defines the mandate, objectives and priorities of the ITU Telecommunication Development Sector (ITU-D) for the period 2018-2021. It also aligns the Development Sector work with the strategic objectives of ITU to allow countries to harness the full benefits of information and communication technologies (ICTs).

This document reports on the implementation of the BAAP, and its contribution to the implementation of the WSIS Plan of Action and the Sustainable Development Goals (SDGs). It also highlights the change that the Telecommunication Development Bureau (BDT), the executing arm of ITU-D, has undergone to ensure that it is able to keep pace with the fast-changing environment in which it serves. The fundamental importance of ICTs and their role of promoting social and economic development and facilitating the path to economic recovery have again been highlighted by the COVID-19 pandemic, which continues to affect countries in the world. This has also underscored the need for a more agile and responsive BDT that can lead efforts to ensure that all people in all countries are connected.

In 2019, BDT began an important journey of change to create a Bureau that can respond effectively to the needs of Member States and Sector Members, and that is more relevant and demonstrates impact and results: a Fit4Purpose BDT. Following extensive internal and membership consultations, BDT has adopted new innovative ways of working, laying foundations that will ensure timely and efficient implementation of the BAAP and future plans. The BDT journey for change has been a participatory and open consultative process, which relies heavily on feedback from and discussion with Member States and Sector Members. It has helped to streamline priorities and goals, and enhance BDT responsiveness while strengthening its impact.

An important building block of the BDT journey of change has been the adoption of a cluster-based approach. The programmes of the Buenos Aires Action Plan have been clustered into thematic priorities that facilitate coordination and synergy across all programmes, projects, initiatives and Study Group Questions. The thematic priority structure - in combination with the adopted results-based management (RBM) approach – also help to strengthen the impact of BDT work on ICT development by identifying links to and improving the delivery of the WTDC-17 goals and objectives, the Connect 2030 agenda, and the 2030 UN Sustainable Development Agenda (see Annex 1, Mapping linkages between thematic priorities, study groups, regional initiatives, SDGs and WSIS). In this context, BDT has also initiated several strategic initiatives, all of which cut across thematic priorities, are global in nature and have the potential to scale across multiple regions. These projects are described in Section 11 of this report.

To ensure an efficient and effective implementation of the BDT work programme, the Bureau has expanded its results-based management (RBM) approach beyond the initial efforts introduced in 2006 and continues to refine the implementation through more effective planning, monitoring and evaluation practices. Theories of change have been developed for each thematic priority of ITU-D, as well as for the BDT overall; these will guide the work programme planning and implementation phases and serve as tools for monitoring progress towards meaningful connectivity.

This document features key results from 2018-2021 for each thematic priority as progress is made towards the implementation of the Buenos Aires Action Plan. This includes reporting on work that has been done towards the achievement of the regional initiatives, with a more detailed overview of the progress on the regional initiatives for [Africa](https://www.itu.int/md/D18-RPMAFR-210329/sum/en), [Americas](https://www.itu.int/md/D18-RPMAMS-C-0004/en), [Arab States](https://www.itu.int/md/D18-RPMARB-C-0004/en), [Asia and the Pacific](https://www.itu.int/md/D18-RPMASP-C-0004/en), [Commonwealth of Independent States](https://www.itu.int/md/D18-RPMCIS-C-0004/en), and [Europe](https://www.itu.int/md/D18-RPMEUR-C-0004/en) (see Detailed information on work towards the achievement of the regional initiatives for each one of the regions ).

Against this backdrop, BDT will continue for the remainder of 2021 and in 2022 to focus on the thematic priorities of the Buenos Aires Action Plan, to deliver sustainable impact and to advance digital connectivity and digital transformation for all. This will also offer an opportunity to build on the adoption of new technologies and develop and expand existing methodologies and inspire others through the sharing of best practice.

# 2018-2021 PROGRESS REPORT

## 1. Capacity development: Building a digitally competent society

### ITU Academy platform

The [ITU Academy portal](https://academy.itu.int/) was redesigned to facilitate a more user-friendly and secure access to ITU capacity development activities, courses, and workshops in the field of information and communication technologies and digital development. The training portfolio ranges from general programmes for government policy-makers and regulators, professional business-focused curricula for senior ICT executives and managers, to specialized programmes for technical and operational staff and accredited academic programmes. The ITU Academy portal has also become a tool for digital inclusion as the training offerings have been widened to include ICT accessibility and training courses targeted at indigenous and marginalized communities.

The ITU Academy registered 2 000 additional users in 2019 for a total of over 10 200 users. During 2020, the ITU Academy experienced steep user growth and an increasing number of online training courses. By the end of the third quarter 2021, over 23 000 people from 188 countries had registered on the platform. Since 2018, 450 courses were delivered via the ITU Academy and 22 197 people were trained, of which 8 057 were certified.

### Centres of Excellence network

In January 2019, [a new cycle of the ITU Centres of Excellence (CoE)](https://academy.itu.int/index.php/centres-excellence/coe-cycles/coe-cycle-2019-2022) programme started. A total of 28 institutions across the globe were selected to operate as ITU Centres of Excellence during the new period, which will last until December 2022. Following the initial round of steering committee meetings, the CoEs delivered training in 15 priority areas, covering topics such as wireless and fixed broadband, cybersecurity, digital economy, Internet of Things (IoT), spectrum management, innovation and entrepreneurship, and policy and regulation. In 2019, during the first year of operation, more than 90 certified training courses were delivered to over 2 100 participants worldwide. By December 2020, the number of certified CoE training stood at 66 courses, but the number of people who participated in the training more than doubled from 2019 figures, to 5 466. In 2021, as of September, 40 CoE courses were implemented, and a total of 2546 people participated in those learning activities. An update on the CoE programme is contained in Annex 2.

### ITU-Academia partnership

The 2nd ITU-Academia Partnership [meeting](https://www.itu.int/en/ITU-D/Capacity-Building/Pages/events/2019/academia2019.aspx) took place in Atlanta, Georgia, United States of America, in December 2019, under the theme of *Developing skills for the digital era*. It brought together representatives from universities and higher education institutions from all over the world with an interest in the topic of digital technologies.

Participants highlighted the need for universities to increase new course offerings to the market by speeding up decision-making processes and reducing bureaucracy, especially in public, state-funded academic institutions. The two-day meeting provided food for thought on the role of universities in the digital economy and how partnerships with organizations such as ITU can further strengthen the role of universities. The participants encouraged ITU to consider creating regional or global think tanks hosted by academic institutions and to provide more opportunities for universities to have advisory roles in specific activities of ITU.

### Digital Transformation Centres initiative

The first phase of the [Digital Transformation Centres (DTC) Initiative](https://academy.itu.int/index.php/main-activities/digital-transformation-centres-initiative) (*Empower communities, close the digital skills gap*) was launched in partnership with Cisco. This new global network of centres will accelerate the uptake of digital technologies among citizens and boost the capacity of young entrepreneurs and SMEs to succeed. This people-centred project will help bridge the digital skills gap and speed up digital transformation, reaching into the heart of communities to empower people with the digital competencies they need to thrive.

During the first phase, from March 2020 to September 2021, nine DTCs across the Africa, Americas, and Asia-Pacific regions (Côte d’Ivoire, Ghana, Rwanda, Zambia; Brazil, Dominican Republic; Indonesia, Papua New Guinea, Philippines) delivered digital skills training at basic and intermediate level to citizens in remote areas and marginalized communities. During the first phase, more than 100 000 citizens have been trained through the DTC Initiative. In November 2020, ITU signed a partnership agreement with the Government of Norway in support of the DTC initiative. The support from Norway will boost digital skills in the countries hosting a DTC, in particular Ghana, where 14 000 citizens will be trained under this new project.

Preparations for the second phase started in July 2021 with the opening of applications for new institutions wishing to join the network. The closure date for applications was in September and the selection process takes place in the months of October-November 2021. The second phase of the DTC Initiative will start operations in January 2022.

### Digital Skills *Insights*

The third edition of the Digital Skills *Insights* [publication](https://academy.itu.int/index.php/main-activities/research-publications/digital-skills-insights) (previously called *Capacity Building in a Changing ICT Environment*) was released in August 2019. It featured eight articles from international experts, taking a critical and analytical approach towards the subject of capacity and digital skills development. Topics included digital literacy frameworks, new methods of teaching and learning in view of digital developments as well as new capacity building concepts and initiatives in the digital age. The publication also showcased concrete examples of the impact of new technologies on skills gaps and skills development in selected developing countries. The [fourth edition](https://academy.itu.int/digital-skills-insights-2020) of the publication was released in September 2020 and featured different aspects of capacity development and skills requirements in the digital era. These include the types of skills needed in the digital economy and future labour market, new jobs and associated skills requirements, specific digital technologies and their impact on skills development, new skills required to manage data and information generated online, as well as a set of articles that explore the topic of gender and digital skills. The fifth edition of the publication is under preparation and will be released at the end of October 2021.

### Digital skills assessment

### The ITU [Digital Skills Assessment Guidebook](https://academy.itu.int/main-activities/research-publications/digital-skills-insights/digital-skills-assessment-guidebook) was released in June 2020 and is available in six languages. It serves as a comprehensive, practical step-by-step tool for national digital skills assessments. The guidebook can be used to determine the existing supply of a digitally skilled cohort at a national level, to assess skills demand from industry and other sectors, to identify skills gaps, and to develop policies to address future digital skills requirements. It is designed for use by policy-makers and other stakeholders, such as partners in the private sector, non-governmental organizations, and academia. The Guidebook has been presented to Member States in Europe and the Africa region. Several countries have started to use the Guidebook for their national digital skills assessments.

### ITU-ILO digital skills campaign and programme activities

ITU continued to lead the [digital skills campaign](https://academy.itu.int/index.php/main-activities/ilo-itu-digital-skills-campaign), which was launched in 2016 as one of eight thematic priorities under the ILO Global Initiative on Decent Jobs for Youth. The campaign seeks to equip young women and men with the skills needed for the digital jobs of today and tomorrow. By 2020, the campaign had received commitments to train more than 16 million young people with job-ready, transferable digital skills by 2030 – more than triple the initial target of 5 million people. Related to the digital skills campaign, but managed as a standalone programme, in early 2020 ITU and ILO, with support from the African Union, launched a [continental programme](https://www.itu.int/en/ITU-D/Regional-Presence/Africa/Pages/projects/2020/jobs-skills.aspx) on boosting decent jobs and enhancing digital skills for youth in Africa’s digital economy. Six African countries (Côte d’Ivoire, Kenya, Nigeria, Rwanda, Senegal, South Africa) have since joined the initiative and others, like Ethiopia, are also exploring the programme. The programme implementation in countries have in 2021 included activities to lay the foundation for scaling-up interventions, developing and deploying analytical tools to generate evidence on youth employment opportunities in the digital economy. The new 2021 joint ITU-ILO digital skills assessment framework is an integral part of this work.

**ITU-UNDP collaboration on digital capacity building**

In 2020, the UN Secretary-General launched the [*Roadmap on Digital Cooperation*](https://www.un.org/en/content/digital-cooperation-roadmap/) containing key actions for implementation. ITU and UNDP were selected co-champions of a multi-stakeholder roundtable on digital capacity building and have been working closely since then to create a multi-stakeholder network, to develop a global database on existing capacity development efforts in the digital space, and to deepen the two agencies’ collaboration with a view to launch a new [joint facility for digital capacity development](https://digital-capacity.org/joint-facility/). More information on the Roadmap is available in section 15 of this report.

### National capacity development

In 2019, a certified training was provided to the Government of Eritrea on advanced technologies, roaming, and mobile money. Concentrated assistance was provided to Burundi with two nationals trained in the ITU centre of excellence in Yaoundé, Cameroun, on broadband and in Kampala, Uganda, on a cyber-drill exercise. Assistance was also provided to Kyrgyzstan.

In 2021, two certified trainings were organized for the National Communications Authority of Somalia on cost modelling and Telecom/ICTs Regulatory Framework, Regulatory Management & Compliance.

### Regional capacity development

Countries from the Arab States region were trained on satellite communications (co-organized with ITSO), 5G (co-organized with GSMA), and Internet governance (co-organized with ICANN, ISOC, RIPE NCC, and the Diplo foundation). Countries from the CIS region benefited from training on satellite communications (co-organized with ITSO) and in the Africa region, training took place on spectrum management (through a partnership with AFRALTI, ITU centre of excellence in Kenya). Training in the Asia-Pacific region took place on [human exposure to radio frequency electromagnetic fields](https://academy.itu.int/training-courses/full-catalogue/human-exposure-radio-frequency-electromagnetic-fields-malaysia). This e-learning course was offered under the CoE partnership with UTM Malaysia and took place in November/December 2020.

As part of the Asia-Pacific region CoE node partnership with the State Radio Monitoring Centre (SRMC) of the Ministry of Industry and Information Technology (MIIT)-China, 372 participants from more than 60 countries participated in face-to-face and e-learning courses. Between 2018 and 2021, trainings were carried out in the area of technology application, such as IoT, human exposure to 5th generation electromagnetic fields and sp[ectrum management and radio frequency (RF) monitoring](https://academy.itu.int/index.php/training-courses/full-catalogue/spectrum-management-and-radio-frequency-rf-monitoring-0) In the Caribbean, the digital policies programme to re-sensitize government officials to the use of ICTs provided public servants with guidance on making policy, legislative, and regulatory decisions.

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| **REGIONAL INITIATIVES**Africa region:* To contribute to close the gender digital divide by getting more girls interested in ICT and coding, over 530 girls learnt coding and soft skills in a series of workshops of the African Girls Can Code Initiative (AGCCI) in 2018 and 2019;
* Under the AGCCI Initiative and to jointly celebrate UN@75 and work on women and young girls in ICT, a hybrid face-to-face and virtual boot camp was organized by ITU and UNECA in Addis Ababa (Ethiopia) in December 2020 for 17- to 20-year-olds from across the continent. Over 125 girls participated in person while over 2 000 girls took part in the virtual sessions over two weeks. On the occasion, an e-Learning sub site of the AGCCI online platform was launched;
* The ITU-ILO programme, with support of the African Union, on [boosting decent jobs and enhancing digital skills for youth in Africa’s digital economy](https://www.itu.int/en/ITU-D/Regional-Presence/Africa/Pages/projects/2020/jobs-skills.aspx) was developed by youth, for youth, in Africa. Launched in 2020, the aim of the continental programme is to empower Africa’s youth and ensure they benefit from the new opportunities in the digital economy, and that their energy and creativity is directed to the advantage of expanding digitally-enabled industries. The six initial countries are Côte d’Ivoire, Kenya, Nigeria, Rwanda, Senegal, and South Africa. The development of national project documents and validation workshops in the countries took place in 2020, following a virtual roundtable featuring multi-stakeholder dialogues to build sustainable partnerships and explore funding mechanisms. Under the programme, and with the collaboration of ITU, ILO and UNDP, a national digitals skills implementation program was developed with South Africa, through consultative workshops in November and December 2020 and a nation-wide consultation in February 2021. All countries have in 2021 developed their national programmes and some have also implemented pilots for proof of concept which serve to further scale activities in a particular country and across the continent.
* To engage members in a discussion on steps needed to bridge the digital divide using universal service funds, USO and innovative financing mechanism, a webinar on USO 2.0 was organized in December 2020;
* Following the regional workshops that were conducted in Lesotho from 10-19 October 2018 and in Benin from 25 November - 4 December 2019, a digital health curriculum was developed and a case study in Lesotho on digital health system requirements and architecture prepared in 2020. Digital health training material and related online courses were also developed in December 2020;
* ITU assisted Malawi, through the Malawi Communications Regulatory Authority and the Environmental Affairs Department, in the development of a national policy on the management of e-waste. In October 2020, 17 ministries and departments and four local authorities were consulted online;
* Baseline assessments to facilitate digital financial inclusion and digital government for Ethiopia were prepared in 2020. The assessments highlight the need for enhanced digital connectivity, capacity development and policy strengthening as a fundamental element to digital transformation. Reliable and robust digital connectivity is crucial as other digital products and services are dependent on seamless and equitable access to internet for their operation;
* Assistance was extended to Lesotho, Sierra Leone, South Sudan, and Malawi in the form of trainings and designing of ICT statistics and household survey tools and instruments throughout the period 2018-2020.

Americas region* Several online training courses were delivered within the ITU network of the Centres of Excellence within the Americas Region in communication protocols for IoTs and satellite communication, optical networks, LTE and 5G, spectrum management, cybersecurity, and climate change;
* Training in technologies was provided to specialists from the public operator Instituto Costarricense de Electricidad (ICE). ICE staff received trainings on different topics related to telecommunication management.
* In 2021, in the framework of the Girls in ICT campaign, more than 100 events were organized in the Americas to celebrate the initiative and over 40,000 girls participated on capacity building activities and workshops related to coding and developing soft skills.

Asia-Pacific region* ITU improved digital skills amongst membership through training in mobile planning, security, blockchain, computer incident response teams (CIRTs), and cybersecurity targeted at SIDSs, LDCs and LLDCs. Papua New Guinea, one of the pilot countries for the ITU [digital transformation centre](https://academy.itu.int/main-activities/digital-transformation-centres-initiative) initiative, started online training in the areas of basic connectivity (in partnership with Cisco, National ICT Authority of Papua New Guinea (NICTA), and the Royal Melbourne Institute of Technology) and empowering women through ICTs and e-commerce. This was done in partnership with the Asia and Pacific Training Centre for Information and Communication Technology for Development (APCICT) /United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).
* As part of the Girls in ICT Day celebrations and governments’ efforts to encourage women in technology in 2020 and 2021, ITU also implemented training sessions on mobile apps development, coding, child online protection and online safety with partners, such as APCICT/UNESCAP, UNESCO, UNICEF, ILO, EQUALS, GSMA, CISCO, Telenor, Code.org, Microsoft among others. These took place in Thailand, Indonesia, Malaysia, Bangladesh and Pakistan, and over 1300 girls participated on capacity building activities.
* For the first 9 months of 2021, 19 CoE courses were organized and a total of 2289 registrations were received from 144 countries. Since the inception in March 2021, the 3 DTCs in the region trained 36,992, out of which 70% were female

CIS RI2: Use of telecommunications/ICTs to ensure inclusive, equitable, quality and safe education, including the enhancement of women’s knowledge of ICTs and e‑government* ITU is implementing a project to set up a digital skills centre for women and youth in Uzbekistan (in partnership with ZTE and IT Park of Uzbekistan). Alongside the project implementation, in March-April 2021, ITU supported national partners in organizing trainings aimed at the development and improvement of digital skills for women and girls from Khorazm Region of the Republic of Uzbekistan, Over 1300 women signed up for the training and 350 successfully completed it after a rigorous selection and testing process;
* An ITU project on creation of a smart educational ecosystem is under implementation in Kazakhstan, in partnership with Kostanay Engineering and Economics University named after M. Dulatov (KINEU). The project is supplemented by a series of online events and trainings, organized by KINEU, with the support of ITU. The objective is to promote STEM education through a hackathon for school students, trainings on online hygiene and digital skills for school students so as to equip them with necessary skills to safely use ICTs in post a COVID-19 online environment;
* Targeted assistance was delivered to Azerbaijan to develop digital skills courses for women, to Belarus on the creation of an IP telephony training centre;
* ITU has updated the highly demanded *onlinesafety.info* course and is planning to launch nationally adapted versions of it in several CIS countries;
* ITU continued to provide assistance to Kyrgyzstan on capacity development of informatics teaches from rural and remote areas. In total, over the period of 2012 to 2021, ITU jointly with Institute of Electronics and Telecommunications (IET) of Kyrgyzstan organized 63 training courses, including 15 courses on site in IET premises, 33 on-site courses in different regions of the country, and 15 online courses. In total, 938 teaches attended, 78 per cent of whom were women. Overall, considering the number of trained informatics teachers and the number of the covered rural schools, 95,000 school children now enjoy more advanced ICT knowledge and skills.
* ITU continued to provide assistance to Kyrgyzstan on capacity development of informatics teaches from rural and remote areas. In total, over the period of 2018 to 2021, ITU jointly with Institute of Electronics and Telecommunications (IET) of Kyrgyzstan organized 21 training courses, including 6 courses on site in different regions of the country, and 15 online courses. In total, 361 teaches attended the course, 83% of whom were women. Overall, considering the number of trained informatics teachers and the number of the covered rural schools, more than 50,000 school children enjoyed more advanced ICT knowledge and skills.
* In 2021, a digital skills assessment for the telecom sector of Armenia was performed to assess the current level of skills of telecommunication industry workers, and their digital skills development needs.

Europe region:* A regional review of national approaches for digital skills development was carried out and helped identify several countries that will receive technical assistance;
* Albania and Ukraine are receiving assistance with the aim of strengthening their institutional capacities in the field of digital skills, including through the development of their national strategy;
* A regional webinar (2020) and a forum (2021) provided an opportunity to exchange regional experiences in the field of digital skills development and helped build new partnerships;
* A regional training for Europe on ICT Business Planning provided the opportunity for over 30 officials from 15 countries to receive training and certification on the basis of the relevant ITU resource.
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## 2. Cybersecurity: Creating a trusted cyberspace for all

**ITU Global Cybersecurity Index (GCI)**

In 2015 ITU kicked-off the [Global Cybersecurity Index](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/global-cybersecurity-index.aspx) (GCI), which has become a trusted reference that measures the commitment of countries to cybersecurity at a global level – to raise awareness of the importance and different dimensions of the issue. Each country’s level of development or engagement is assessed along the five pillars of the GCA, which provide the general foundation and framework for the index. Based on a multi-stakeholder approach and initiative, the GCI leverages the capacity and expertise of different organizations, with the objectives of improving the quality of the survey, fostering international cooperation, and promoting knowledge exchange on the topic.

Following the publication of the third edition of the GCI findings and its inclusion in Resolution 130 (Rev. Dubai 2018), the fourth edition of the GCI (GCIv4) was initiated during the Study Group 2 Question 3 meeting in October 2019.

In October 2020, the GCI Weightage Expert Group meeting was held to discuss the approach to recommend weights of the GCIv4 indicators, sub –indicators, and micro-indicators based on the relative importance of cybersecurity measures within the GCI model.

In June 2021, the ITU launched its fourth edition of the [Global Cybersecurity Index](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/global-cybersecurity-index.aspx) (GCI) report that mapped 82 questions across five key pillars: Legal, Technical, Organizational, Capacity Development, and Cooperative Measures. The edition showed considerable improvement in commitment to cybersecurity worldwide. Key findings can be found in the [GCI 2020 report](https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2021-PDF-E.pdf).

**Child online protection (COP)**

In 2019, substantive regional efforts were undertaken to address child online safety issues. In the Africa region, discussions started with Chad, Kenya, Malawi, and Rwanda on the implementation of national strategy frameworks. In particular, the COP Regional Forum held in Ghana discussed several issues related to child online protection in the Africa region. In the Asia-Pacific region, assistance was provided for the development of the ASEAN Regional Framework on Child Online Protection in coordination with other partners, such as TELSOM/TELMIN. In the Arab region, support on COP was provided to several countries and ITU participated in different national task forces to integrate the COP guidelines into national activities. The main beneficiary countries were Sudan, Bahrain, Lebanon, Iraq, and Egypt.

The Broadband Commission for Sustainable Development, for which ITU serves as the Secretariat, includes a Working Group on Child Online Safety, led by the World Childhood Foundation and Zain. The group released a comprehensive [report](https://www.broadbandcommission.org/Documents/working-groups/ChildOnlineSafety_Declaration.pdf) in 2019.

ITU and partners coordinated action to contribute to the [technical note on COVID-19 and its impact on child online protection](https://www.itu.int/en/ITU-D/Cybersecurity/Documents/COP/COVID19%20Online%20Technical%20note%20resource%20pack_PUBLISHED.pdf). The main purpose of this note is to offer technical guidance on how to mitigate key risks posed by COVID-19 and the increased exposure of children to online harms.

During 2019, a multi-stakeholder expert working group, consisting of more than 50 organizations and individual experts, started the review of the ITU [child online protection guidelines](https://www.itu.int/en/cop/Pages/guidelines.aspx), which were first issued in 2009. The revised guidelines were launched in June 2020, followed by a [global virtual event](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/2020-COP-Guidelines-launch-webinar.aspx), organized by ITU and partners, and [regional launches](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/COP/2020/Regional-Launches-COP-2020-Guidelines.aspx). The new guidelines were re-designed from the ground up to reflect the significant shifts in the digital landscape in which children find themselves, such as the Internet of Things, connected toys, online gaming, robotics, machine learning and artificial intelligence.

Child online protection has also been included as one of the key elements of the empowerment pillar of the ITU UNICEF joint project [Giga](https://gigaconnect.org/).

ITU has also signed a collaboration agreement with the [SCORT Foundation on COP i](https://www.itu.int/en/myitu/News/2021/04/06/07/20/Empowering-women-girls-sport-technology)n, and through, Sport. ITU has contributed to many discussions such as Safer Internet Day 2021 and the [15th European Football for Development Conference](https://www.efdn.org/blog/news/15th-efdn-conference-kicked-off-with-more-than-150-clubs-leagues-and-fas/).

In 2020, ITU and the Kingdom of Saudi Arabia signed an [agreemen](https://www.itu.int/en/mediacentre/Pages/cm11-2020-ITU-SaudiArabia-partnership-COP-guidelines.aspx)t to implement a global program on ‘*Creating a safe and empowering cyber environment for children’.* The [program](https://www.itu-cop-guidelines.com/implementation) kicked-off in August 2021 and will strengthen global efforts to implement the ITU Child Online Protection guidelines*.* The new collaboration aims to develop and implement child online safety policies among governments, industry, and civil society to increase capacity development and knowledge sharing with all relevant stakeholders. The focus of this project – fostering a culture of child online safety – will contribute to the ITU mission of ensuring cybersecurity at the international level. As a result, ITU Member States will benefit from child online protection policies based on the new 2020 resources developed by ITU and COP Partners.

[ITU has also contributed to the adoption of the General Comment 25 on children’s rights in relation to the digital environment](https://www.end-violence.org/articles/celebrating-adoption-general-comment-25#:~:text=General%20Comment%2025%20not%20only%20raises%20awareness%20of,and%20other%20forms%20of%20violence%20on%20the%20internet.), by the UN Committee on the Rights of the Child: A UN inter-agency working group on child online protection was composed by the Committee on the Rights of the Child and the vibrant community of child online protection experts, both within the UN system and from civil society.

Finally, ITU is working on the dissemination of Sango’s messages ([[[COP Mascot](https://news.itu.int/meet-sango-the-new-child-online-protection-mascot/) launched in 2020) in several countries and through several partners in order to develop relevant content to raise awareness on Child Online Protection.](https://www.itu-cop-guidelines.com/children)](https://www.itu-cop-guidelines.com/children) The COP mascot announced the Online Safety course with Sango for young children under 13 years on Safer Internet Day 2021 to raise awareness and build capacity on online safety with children. The series was launched with a trailer at the [Online Safety moment](https://www.itu.int/women-and-girls/girls-in-ict/girlsinict-online-safety-moment/) of the Girls in ICTs’ 10th anniversary celebration series of events.

All the above activities are undertaken as joint efforts between the Cybersecurity and Digital Inclusion thematic priorities.

**National CIRTs and Incident response**

To date, more than 80 countries have received assistance to assess their national cybersecurity preparedness and incident response capabilities. At his point in time ITU engaged in 22 CIRT-related projects, 7 CIRT projects are ongoing with four (4) of them at closing phase: CIRT implementations are ongoing for Bahamas, Barbados, Botswana, Kenya, Malawi, Burundi, and Gambia (Botswana, and Gambia implementation projects are under closing, completed this year), while CIRT enhancement for Kenya and Barbados are in the process of finalization.

ITU is continuously engaged with FIRST (the Forum for Incident Response and Security Teams) and contributed to the work required to improve the CIRT Service Framework further. Support is also provided to the revision of existing training materials that are part of a capacity-building program to establish and manage national CIRT’s operations.

ITU undertook a technical assessment to evaluate the preparedness for the establishment of Computer Incident Response Team (CIRT) for Malawi (2018), Congo (2018), Niger (2018), Liberia (2019), Chad (2019), Gambia (2019), Bosnia and Herzegovina (2019), Mauritania (2019), Albania (2019) Guyana (2020), Bermuda (2020). Bahamas (2021) and Guinea Bissau (2021).

In 2018, through the implementation of CIRT services and related capabilities project, the State of Palestine was assisted in building and deploying the technical capabilities and related training for CIRT operations.

Specialized country assistances on CIRT assessments and skill building were provided to Papua New Guinea, Samoa, Tonga, and Vanuatu through an Australian Government Department of Infrastructure, Transport, Regional Development and Communications supported project. Capacity development on CIRT was provided to Papua New Guinea and Vanuatu through the [ITU-DoCA project](https://www.itu.int/net4/ITU-D/CDS/projects/display.asp?ProjectNo=9RAS18061).

**CyberDrills and capacity development**

To ensure that the national CIRTs apply good practices to respond to cybersecurity incidents and foster technical cooperation among national CIRTs, a number of CyberDrills have been organized at a regional and intra-regional level over the last few years.

In 2018, a high-level exercise simulating of a national cyber-related crisis was held in Mauritius.

Five ITU regional CyberDrills were organized in the Ivory Coast (Africa) Cyprus (Europe), Azerbaijan (CIS) , Kuwait (Arab States) and Argentina (Americas).

In 2019, an inter-regional CyberDrill (CIS and Asia-Pacific regions) was held in Malaysia and a CyberDrill for the Africa region was organized in Uganda. In the Arab States region, a CyberDrill was organized in Oman, in collaboration with the Arab Regional Cybersecurity Centre ([ARCC](https://arcc.om/?GetLang=en)) to ensure continued collective efforts in mitigating cyberthreats among the national computer incident response teams. The Europe region organized a CyberDrill in Romania to coincide with the 2019 presidency of Romania of the Council of the European Union. Following an invitation from the G20 Presidency, ITU agreed to act as knowledge partner for security in the digital economy priority of the G20 Digital Economy Task Force.

In 2020, the [ITU 2020 Global CyberDrill](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/Cybedrills-2020.aspx) was delivered virtually and covered several cybersecurity relevant areas: six regional dialogues on cybersecurity challenges took place during the COVID-19 pandemic. In addition, webinars on [empowering women in cybersecurity](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/CyberDrill-2020-Empowering-Women-in-Cybersecurity.aspx) and cyber crisis management planning highlighted the importance of inclusiveness and resilience. Hands-on training was also part of this global event focusing on [effective online open source investigations](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/CyberDrill-2020/How-to-conduct-effective-Open-Source-Investigations-Online.aspx) followed with trainings on tools used in [Incident Response – TheHive and Cortex](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/CyberDrill-2020/Incident-Response-with-TheHive-and-Cortex.aspx). Several experts discussed the importance of the [implementation and monitoring](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/2020-NCS-IM-webinar.aspx) of national cybersecurity strategies. In Asia and the Pacific, the Pacific CyberDrill was organized in December 2020, which superficially targeted at SIDS to enhance their cybersecurity capabilities. A national CyberDrill was held for the Kingdom of Eswatini in December 2020.

The [2021 Global CyberDrill](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/Cyberdrills-2021.aspx) took place between September-November 2021. This set of events included 3 interregional meetings that covered all 6 ITU regions, 2 webinars, 6 training sessions and 6 scenario-based exercises.

**Women in Cyber Mentorship Programme**

ITU and the Forum of Incident Response and Security Teams (FIRST), with the support of [EQUALS Global Partnership](https://www.equals.org/) launched a joint mentorship programme for empowering women in the cybersecurity sector. The first edition of the programme focused on the Arab and Africa regions. It engages role models and leaders in this field and connects them with talented women worldwide. This effort aims at overcoming the global gender gap in the field of cybersecurity, through the creation of a global mentorship programme aimed at building capacity of women wishing to pursue a career and evolve within the cybersecurity sector. The Women in Cyber Mentorship Programme is three-fold, and incorporates a series of inspirational webinars, technical and soft skills training courses, and a six-month mentorship module. All activities were delivered online over the course of eight months, from March 2021 to August 2021.

**National cybersecurity strategies**

ITU assists Member States in developing and improving effective national cybersecurity strategies. The [Guide to Developing a National Cybersecurity Strategy](https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-CYB_GUIDE.01-2018-PDF-E.pdf) (NCS), developed through a multi-stakeholder collaborative process, constitutes a good practice guide and functional toolkit that has been used by countries in all regions to develop and improve their cybersecurity strategies. Since its launch in September 2018, national and regional workshops have been organized to support several countries, with four receiving direct assistance to develop and revise national cybersecurity strategies using the Guide. The process to update NCS is underway and expected to end in October 2021 as co-created, co-branded process of 22 entities. ITU has also developed the training “[Lifecycle, principles and good-practices on national cybersecurity strategy development and implementation](https://academy.itu.int/training-courses/full-catalogue/lifecycle-principles-and-good-practices-national-cybersecurity-strategy-development-and)”. The training, which is based on the Guide and entirely delivered online via the ITU Academy platform, is available in English and will be translated into French, Spanish and Russian.

The [Guide to Developing a National Cybersecurity Strategy](https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-CYB_GUIDE.01-2018-PDF-E.pdf) (NCS), on national cybersecurity strategies has been used by countries in different ITU regions. In particular:

* A regional workshop, hosted by the Ministry of Informatics and Cyber Security Agency of Indonesia in Jakarta, was dedicated to cybersecurity strategies and general data protection regulations;
* A regional workshop, hosted by Macedonia, was dedicated to improving national strategies for five countries in the region;
* A regional workshop, hosted by Tunisia, focused on improving national strategies of countries from the Africa region and the Arab States region. Twenty countries actively participated;
* In the Africa region, Benin was assisted in drafting its national cybersecurity strategy;
* In the Asia-Pacific region, Kiribati and the Solomon Islands were assisted in strengthening their cybersecurity strategy frameworks and to develop their national cybersecurity strategies.

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| **REGIONAL INITIATIVES**Africa RI3: Building trust and security in the use of telecommunications/information and communication technology* Regional Cyberdrills Côte d’Ivoire (2018), Uganda (2019), Global Cyberdrill (online – 2020) and National Cyberdrill in Mauritius (2018), the Kingdom of Eswatini (2020); Africa-Europe Interregional Cyberdrill Meeting (online, in 2021)
* ITU and partners delivered capacity building in Burkina Faso (2018), Eswatini (2019) and an inter-regional workshop on National Cybersecurity Strategy in Tunisia. The Regional Forum on Child Online Protection was held in Accra, Ghana in October 2019. ITU undertook a technical assessment to evaluate the preparedness for the establishment of a Computer Incident Response Team (CIRT) for Malawi (2018), Congo (2018), Niger (2018), Liberia (2019), Chad (2019), Gambia (2019) and Guinea Bissau (2020);
* ITU assisted in the development of a national cybersecurity strategy for Benin in 2019 and of the national cybersecurity strategy for Liberia in December 2020;
* A Public Key Infrastructure framework was developed and training delivered for Malawi in December 2020;
* In 2021, the national CIRT stakeholders of Gambia were trained on CIRT operations;
* In 2019 and in partnership with Deloitte Risk Advisory, a cybersecurity landscape review was conducted for Côte d’Ivoire, including on the ITU Global Cybersecurity Index findings. The review helped the country to identify cybersecurity priority initiatives to improve its cybersecurity situation. Guidance was extended to South Africa towards developing a national data policy, including a review of the cloud, privacy, and cyber-security draft policy. A workshop for key policy bodies was held in January 2020.

Arab States region: Confidence and security in the use of telecommunications/ICTs:* During the Regional Cyber Security Week for the Arab States region, the ITU Arab Regional Cyber Security Centre (ITU-ARCC) fostered information sharing and capacity building in the field of cybersecurity. The week provided a platform for senior ICT and cybersecurity officials from the region to meet with relevant stakeholders and discuss threats, evolution, opportunities and cybersecurity challenges;
* Capacity development and technical assistance were provided to Sudan to improve its strategy on critical information infrastructure protection.

Americas region:* As of 2021, ITU is implementing a cybersecurity and disaster reduction programme for Barbados;
* An online training course on Advanced ICT Policy and Regulations was delivered in 2019 and in 2020 to support ITU members covering topics related to internet governance, connectivity, and cybersecurity;
* From 4 to 8 June 2018, ITU organized the Regional Cybersecurity Workshop and Cyberdrill at the kind invitation from the government of Argentina and hosted by the Universidad de La Plata. The event was attended by 117 people. Of these, 15 people attended the session on child online protection and 50 people participated to the hands-on exercises of the cyberdrill. The event included participants from Argentina, Bahamas, Brazil, Chile, Cuba, Ecuador, El Salvador, Guyana, Paraguay, and Uruguay;
* On 15 September 2020 ITU organized the online cybersecurity Americas Regional Dialogue: CIRTs and Lessons Learned from COVD19 crisis. The event was attended by 100 people from Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guyana, Mexico, Paraguay, Peru, Suriname, Trinidad and Tobago, United States, and Uruguay.

Arab States region:* Regional Cyberdrills were organized in Kuwait (2018) and Oman (2019);
* In 2018, ITU organized a High Level Regional Meeting for Building Partnership with Academia in the Field of Cybersecurity. The objective was to establish a partnership between academia and other ITU members in order to build confidence and security in the use of ICTs, and to highlight the importance of creating academic professionals in the Arab region;
* ITU organized the Regional Workshop on Securing the Critical Infrastructure for the Financial Industry in Cairo-Egypt, in October 2018;
* A training course for the Saudi public prosecutors commission on cybersecurity and data privacy took place in Cairo, Egypt, in December 2018;
* A workshop on the technical assessment for Computer Incident Response Teams (CIRTs) Establishment Readiness took place in Mauritania, in December 2018;
* A CIRTs training was organized for Palestine, in Cairo, Egypt, in March 2019;
* In 2018, ITU assisted Mauritania in the development of a national cybersecurity strategy for the period 2019-2022.
* During the annual Regional Cyber Security Week for the Arab States region (held in 2018 and 2019), the ITU Arab Regional Cyber Security Centre (ITU-ARCC) fostered information sharing and capacity building in the field of cybersecurity. The week provided a platform for senior ICT and cybersecurity officials from the region to meet with relevant stakeholders and discuss threats, evolution, opportunities and cybersecurity challenges.
* An ASBU-ITU Training Course on Cyber Security took place in Tunisia in June 2019 and was organized in cooperation with the ASBU Training Center in Tunis;
* ITU organized the Interregional Workshop for Africa and the Arab region on “National Cybersecurity Strategies”, and the Global Cybersecurity Index (GCI) Report- Iteration 2018, in Tunis, in December 2019.
* The 2019 “Implementation of CIRT Services and related capabilities” project in Palestine aimed at building and deploying the technical capabilities and related trainings necessary to the implementation of Palestine’s CIRT.
* In December 2019, Capacity development and technical assistance were provided to Sudan to improve its strategy on critical information infrastructure protection and a “Critical Infrastructure ICS/OT Cyber Security Roadmap” report was issued in 2020.
* Acknowledging the impact that COVID-19 continues to place on nations’ ICT systems, the Arab States regional dialogue was held in September 2020 and attended by 75 registered delegates from over 16 countries.
* In 2020, The regional office started to build on the partnership with Meem Ain regarding the MALI project on digital financial inclusion for children, to formulate another project called AMANI that aims to provide interactive digital solutions to protect Arab children against Internet threats and to raise their awareness about risks and harms of the digital world. The program addresses the basic and fundamental knowledge and skills needed for children to navigate safely and responsibly online, pursuing many topics such as digital security and privacy, online footprint, and online communication.
* To support the active implementation of the COP Guidelines across the Arab region, a joint consultation with the SAMENA Council took place in November 2020 to address some of the key challenges and opportunities around implementing the 2020 COP Guidelines for the Industry.
* The 2020 ITU COP Guidelines and Opportunities for Implementation workshop took place in the Arab Region in November 2020.

Europe RI4: Enhancing trust and confidence in the use of ICTs* In 2021, ITU supported the organization of the annual Moldova Cybersecurity Week in Chisinau, Moldova. The conference offered networking opportunities and a platform to exchange ideas, discuss and collaborate to drive, through innovation, global cybersecurity strategies and solutions. In 2020 an additional special training on the protection of critical infrastructure was provided;
* The Ukraine Online Safety: Contemporary Challenges 2020 was held in Ukraine and co-organized by ITU. The conference provided an opportunity to build human capacities in field of COP at the national level;
* The Cyber Shield 2019 was held in Ankara, Turkey, and was supported by ITU. The event offered a unique opportunity to participate in many technical activities in cybersecurity. The main objectives were to increase incident response capabilities and readiness levels, to increase mutual understanding of cyber risks and associated impacts, and to ensure a continued collaborative effort among international cybersecurity stakeholders, especially national computer emergency response teams (CERTs) in order to mitigate cyberthreats;
* Progress was made in the field of child online protection: an international conference for Europe on keeping children and young people safe online was co-organized and held in Warsaw, Poland, in 2019 and online in 2020 and 2021. A Regional Forum for Europe on Child Online Protection was organized in 2020 (hosted by ONAT Academy, Ukraine) to facilitate cooperation and advance the roll out of the COP Guidelines in Europe. A regional study on national approaches for keeping young people and children safe online was drafted for review and opened for consultations with the countries. Assistance was provided to Georgia and Ukraine in the development of a national strategy on child online protection. A strategic review of the national assessment for COP was carried out in Moldova. Albania is a pilot country for the roll-out of the ITU COP Global project aiming at fostering a culture of child online protection with all relevant stakeholders through knowledge sharing and digital skills development. Assistance will also be provided to North Macedonia on a National Child Online Protection Assessment and operational roadmap aiming at strengthening the safety of children and young people online. Over 16 countries have been proactively engaging in the roll out of the COP Guidelines, and COP Guidelines are available in over 10 European languages.

Asia-Pacific RI5: Contributing to a secure and resilient environment* Specialized country assistance on CIRT assessments and skills building was provided to Papua New Guinea, Samoa, Tonga, and Vanuatu through an Australian Government Department of Infrastructure, Transport, Regional Development and Communications supported project;
* ITU supported Kiribati and Solomon Islands to strengthen their cybersecurity strategy frameworks, including conducting table-top exercises to build national capacity in developing or improving their national cybersecurity strategies. During 2019-20, more than 550 participants raised their awareness and skills on Safeguarding Critical National Infrastructure (CNI), Critical information protection and CyberDrills, while more than 250 participants improved their skills on security related issues through the ITU Asia-Pacific CoE
* In December 2020, ITU organized a Pacific Cyberdrill with a focus on SIDS. In 2021, RO-ASP, together with the regional office in CIS, organized an interregional meeting as part of the global CyberDrill.
* The ITU assessed the cybersecurity education capacity of Viet Nam, including at undergraduate, postgraduate, and doctoral level courses. It provided recommendations for future cybersecurity education capacity initiatives as well as lists of useful sources of benchmark initiatives and resources, including similar education programmes in Australia, Singapore, and the United Kingdom.

CIS region: * ITU completed a CIRT assessment in Kyrgyzstan and will implement a CIRT establishment project in the country, co-funded by the World Bank.
* ITU organized several regional and interregional CyberDrills attended by 200-300 participants each. In 2017 ITU organized the interregional CIS and Europe CyberDrill in Moldova, in 2018 the first standalone CIS regional CyberDrill in Azerbaijan, and in 2019 in Malaysia, jointly with the Asia Pacific region. In 2020 and 2021 Member-States from the CIS region were actively engaged in the global CyberDrills, with most of the countries nominating CIRT teams to participate in the scenarios.
* A regional dialogue for CIS and an interregional meeting on cybersecurity for CIS and Asia and the Pacific were organized as part of the Global CyberDrill to facilitate sharing of best practices and experience amongst the countries of the region.
* Several major partnerships have emerged around the cybersecurity subject, including with OSCE and the World Bank. In 2021, ITU, jointly with OSCE, organized the first national Cyberdrill in Kyrgyzstan, attracting over 150 participants.
* Russia, Azerbaijan, Kazakhstan, Kyrgyzstan, and Uzbekistan use GCI as one of the key metrics for national cybersecurity policy planning and implementation. Over the last four years, ITU has provided support and training upon requests from these Member-States.
* Building on the global launch of the Child Online Protection Guidelines in June 2020, a regional forum on Child Online Protection was held in October 2020 by ITU, in partnership with the UNESCO Institute of Information Technologies in Education. It was attended by representatives of ministries, regulators, telecommunications operators, universities and general education institutions, research and development institutes, organizations of the UN System, and other stakeholders from ITU Member States. The online dialogue within the framework of the forum focused on the actual usage and implementation of [the COP Guidelines​](https://www.itu.int/en/ITU-D/Cybersecurity/Pages/COP-2020-Guidelines.aspx) at the national and regional level and provided the opportunity for deep dive analysis and discussions on approaches and policies on child online protection.
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| **STUDY GROUPS** A [workshop on cybersecurity emerging issues](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q3-2-oct18.aspx) was held in October 2018, in conjunction with ITU-D Study Group 2 Question 3/2 (*Securing information and communication networks: Best practices for developing a culture of cybersecurity*). The workshop shared updates on cybersecurity trends, explored new elements to be reflected in related strategies and policies, and discussed how stakeholders can collaborate to contribute effectively to their implementation.  |

## 3. Digital inclusion: Building inclusive policies for equal ICT access and use

### Ensuring inclusive, equal access and use of ICTs for all

**ICT Accessibility Awareness Raising:** ITU-D raised awareness of the [ICT accessibility](https://www.itu.int/en/ITU-D/Digital-Inclusion/Persons-with-Disabilities/Pages/Persons-with-Disabilities.aspx) topic and between 2018 and August 2021 designed, developed, and promoted a number of tools and resources. These were delivered to over 20’000 ITU members, stakeholders, and decision-makers to support global efforts and commitments to build accessible environments and inclusive communication for all people – regardless of their gender, age, ability, or location.

The awareness raising and promotion of the ITU-D tools and [resources](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/resources-on-ICT-accessibility/default.aspx) aiming at supporting regional and global implementation on the topic was done face to face and on-line through multiple events, thematic meetings, workshops, conferences, and forums. These include the [WSIS](https://www.itu.int/net4/wsis/forum/2021/Agenda/SpecialTrack/3) tracks in ICT accessibility (2018, 2019, 2020,2021), the UN Conference of States Parties to the Convention on the Rights of Persons with Disabilities (CRPD) implementation (2018, 2019, 2020, 2021), Mobile Learning Weeks (UNESCO 2018, 2019), M-Enabling Summits (2018, 2019), International Congress of Technology for Diversity (2018), Zero Project Conference (2018, 2019, 2020, 2021), The Digital Inclusion Summit – Leaving no one behind (2021), the first ever Universal Design Day (2021), Inclusive Conference in Africa online (2020), ARB QITCOM (2019), ITU-UNESCO Digital Inclusion Week for the Arab States region (2018,2019, 2020), ASP with UNITAR online (2020), several ITU Accessible Americas- ICT for ALL events (Jamaica (2018), Ecuador (2019), and on-line (2020)), several ITU Accessible Europe – ICT for ALL events (Austria (2018), Malta (2019), on-line (2020) Portugal on-line (2021)), and five regional online workshops in ICT accessibility introducing the self-assessment for ICT accessibility implementation (April 2021 in English and French).

**ICT Accessibility Resources:** Between 2018 and August 2021, ITU-D designed, developed and made available sixty (60) tools and resources to ITU members and stakeholders. These [resources](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/resources-on-ICT-accessibility/default.aspx) and tools include policy guidelines, toolkits, trainings (on-line/ face to face) ICT accessibility (in country) educational programmes, video tutorials, and in-country and regional assessments. Specific resources on COVID19 response and recovery were also developed. These resources were designed, developed, and made available in several UN languages to support ITU members in the regional and global implementation of ICT accessibility. Online trainings are delivered through the ITU Academy free of charge and self-paced, with localized content and the possibility of certification.

All ITU-D resources on ICT accessibility are delivered in accessible formats to ensure that persons with disabilities can also benefit. Examples include the ITU toolkit “Towards building inclusive digital communities,” and interactive self-assessment for ICT accessibility implementation (English, 2021).

Resources such as the above toolkit allow ITU members and policy makers to gain ICT accessibility knowledge and provide them with the tools and know-how to drive digital inclusion for everyone within their countries. They also allow ITU members to monitor and evaluate ICT accessibility implementation to build inclusive digital environments and communities. Key resources are:

* ITU video-tutorial on the development of an in-country self-assessment (ITU toolkit, 2021);
* Video-tutorial on: ICT Accessibility: the key to achieving a digitally inclusive world (2021);
* ITU Report on the Information and Communication Technology (ICT) Accessibility Policy Review of the Republic of Serbia (2021);
* ITU regional assessment and report on ICT accessibility for the Africa region, with related capacity building workshops (2021);
* ICT accessibility assessment report for the Europe region (2021);
* [ITU guidelines on how to ensure that digital information, services and products are accessible by all people, including persons with disabilities during COVID-19](https://www.itu.int/en/ITU-D/Digital-Inclusion/Persons-with-Disabilities/Pages/COVID-19-Guidelines.aspx) (2020, in Arabic, Chinese, English, French, Spanish, Russian). These guidelines were selected and translated by the UN COVID-19 emergency group into the 22 most spoken languages in the world;
* ITU regional assessment on ICT Accessibility for the Asia-Pacific region (2020);
* ITU regional baseline assessment on ICT Accessibility in the CIS Region (2021);
* On-line self-paced training on: [How to ensure inclusive digital communication during crises and emergency situations](https://academy.itu.int/index.php/training-courses/full-catalogue/how-ensure-inclusive-digital-communication-during-crises-and-emergency-situations) (2020, in English, French, Spanish);
* Video- tutorial on: How to ensure inclusive digital communication during crisis and emergency situation (2020, in English, French, Spanish);
* Updated and localized on-line self-paced training on ICT Accessibility: The key to inclusive communication (2020, in Arabic, English, French, Russian and Spanish);
* Updated and localized on-line self-paced training on Web Accessibility: The Cornerstone of an Inclusive Digital Society (Arabic, English, French, Russian and Spanish (2020);
* ITU-WHO [Toolkit and Global Standard for safe listening devices and systems](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/Digital_Inclusion_Resources/Strategies%2C%20policies%2C%20toolkits/Toolkit_safe_listening_devices/safe_listening.aspx) (Arabic, Chinese, English, French, Spanish, Russian), 2019;
* Video tutorials on ITU-WHO [Toolkit and Global Standard for safe listening devices and systems](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/Digital_Inclusion_Resources/Strategies%2C%20policies%2C%20toolkits/Toolkit_safe_listening_devices/safe_listening.aspx) (2019, in Arabic, Chinese, English, French, Spanish, Russian);
* [Artificial Intelligence and Information Communication Technology Accessibility](https://www.itu.int/en/ITU-D/Digital-Inclusion/Documents/AI%20and%20ICT%20Accessibility_webEA3_Final.pdf) (2019);
* [Standards in the Procurement of Accessible Products and Services](https://www.itu.int/en/ITU-D/Digital-Inclusion/Documents/ICT%20Accessibility%20standards%20procurement%20FINAL.pdf) (English) (2019);
* [Future of Accessible Audiovisual Media Services, TV and Video Programming](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2019/Accessible%20Europe/191107_AVMS%20Accessibility%20in%20Europe%20%28Final%20edition%29.pdf) (2019);
* In-country Web Accessibility Educational Programme “Internet for @all”, with web curriculum available in Arabic, English, French, Spanish, (2018);
* Video Tutorial on Web Accessibility Educational Programme “Internet for @ll” (2018);
* Video-tutorials on: [Creation and Remediation of accessible digital content (five](https://www.itu.int/en/ITU-D/Digital-Inclusion/Persons-with-Disabilities/Pages/Video-Tutorials-on-Accessible-Digital-Content.aspx) video tutorials) (2018, in English, French, Spanish).

Capacity was built for over 1’300 people from amongst ITU members, stakeholders and decision-makers in topics related to digital accessibility through face-to-face, blended, and on-line trainings. Some obtained ITU certification.

Additionally, ITU-D expertise and knowledge on the topic contributed to the implementation of the UN Disability Inclusion Strategy (UNDIS) and the development of UN related resources, including:

* WIPO technology Trends and Assistive Technology (2020);
* UN Disability Inclusion Practice for the Business Operations Strategy (DCO) (2021);
* ITU shared knowledge and expertise on the topic of ICT accessibility with the United Nations Country Teams representatives during two webinars on ICT & Digital Accessibility (2021);
* Terms of Reference for “ICT/Accessibility Guidelines for Telehealth and e-Health Applications” developed by the UN joint COVID-19 response and recovery - emergency working group on health work stream (2020);
* ITU UNDIS Report (2019);
* A joint ITU and ILO project on the development of Guidelines to ensure digital accessibility of online job application and recruitment systems. This project provides guidance and develops the capacity of governments and UN agencies to guarantee inclusive access to work (2021).

### Women and girls

### The [10th Anniversary of Girls in ICTs](https://www.itu.int/en/ITU-D/Digital-Inclusion/Women-and-Girls/Girls-in-ICT-Portal/Pages/GirlsInICTDay/2021/GICT-2021.aspx) was celebrated on 22 April 2021. With the theme ‘Connecting girls, creating brighter futures’, 10 Moments of Girls in ICT was a series of virtual events hosted by ITU and its partners. The 10 Moments series was designed with three goals in mind: build momentum and awareness about the importance of encouraging girls in STEM; engage key stakeholders and communities; and provide an inclusive platform to discuss the best ways to encourage girls to pursue STEM careers.

The ITU [“European celebration of Girls in ICT 10-year anniversary"](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2021/GInICT/Default.aspx) was organized by the ITU and EQUALS-EU, with the support of UN Women and CEPT and included high level messages from the European Commission (EC) and Regional Cooperation Council (RCC) and Generation Connect Europe Youth Group. It was held within the framework of the ITU Girls in ICT day initiative, which aims to empower girls and young w omen through ICTs, as well as the ITU regional initiative for Europe on accessibility, affordability and skills development for all to ensure digital inclusion and sustainable development. This virtual celebration was held on 22 April 2021. The virtual [event](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2021/GInICT/Default.aspx) was followed and viewed by over 1500 individuals and supported with captioning.

A special session dedicated to International Girls in ICT Day and the launch of the Network of Women for the CIS Region was held in April 2021, with participation of delegates of Regional Preparatory Meeting for WTDC and the Generation Connect Youth Group for CIS. Participants discussed the opportunities of professional fulfilment of girls/women in the ICT and through ICT and shared their experience in pursuing ICT/Telecom related education and careers.

In September 2021, as part of Girls in ICTs 2021, Airtel Networks Zambia Plc partnered with the Smart Zambia Institute to provide digital skills training to schoolgirls in the country and to encourage them to pursue careers in STEM. Under the program, hosted by Smart Zambia Institute, 150 girls selected from three provinces in Zambia will undergo digital skills training that will run throughout 2021.The partnership is part of the Digital Transformation Centres (DTC) initiative launched by the ITU and CISCO.

In 2018 and 2019, over five hundred girls participated in coding workshops as part of the [African Girls Can Code](https://www.itu.int/en/ITU-D/Regional-Presence/Africa/Pages/African-Girls-Can-Code.aspx) Initiative, an initiative by ITU, the African Union and UN Women with financial support of ITU and the Royal Danish Embassy in Ethiopia. In 2020 the initiative scaled and went hybrid and held an event with UNECA in Addis Ababa, Ethiopia, with 125 girls participating in person and over 2 000 girls from across the continent participating remotely. The second phase of the initiative is bringing the regional initiative to the national level, with the development of customized national programs with partners*.*

The [Americas Girls Can Code Initiative](https://www.youtube.com/watch?v=gkYUlpgasoo) has taught over 7 000 girls how to code through a series of workshops organized with the support of many different partners. Americas Girls Can Code initiative counts today on a new ITU project supported by Facebook. Its main objective is to promote the development of digital skills activities in benefit of girls and young women from the region and to provide support to beneficiary countries to review/adopt digital inclusion policies and strategies.

The project was signed in January 2021 to be implemented in 2 years. As a co-founder of the EQUALS initiative in 2016, ITU has been leading the efforts along with other members to ensure that women can access ICTs, are equipped with digital skills, and build leadership. EQUALS is a cooperation among more than 100 partners across 115 countries. Thanks to this partnership, over 52 000 women and girls have received digital skills training and mentoring. Some 146 research projects have been explored to tackle the gender digital divide and identify solutions areas that lack regular access to Internet & digital technologies. The initiatives ITU leads through EQUALS and the regional offices are made possible thanks to the expertise and collaboration of partner governments and the private sector.

ITU has been conducting long-standing work on Child Online Protection to develop a training on safety online for girls. In 2020 and 2021, workshops were delivered in Pakistan. In 2021, the safety module for girls was delivered in four workshops, with the participation of 334 girls and young women in Trinidad & Tobago, the Commonwealth countries, and in two workshops in Uganda.

(For more info on COP related activities, please refer to Section 2 of this document)

ITU and CISCO launched the CISCO EQUALS Learning Space, which aims at providing online courses to build tech skills where girls and young women can access free training on specific topics such as Cybersecurity, Entrepreneurship and Internet of Things. The courses are self-paced with the integration of live sessions delivered by experts of the EQUALS network. Participants that successfully conclude the training receive a CISCO and EQUALS certification and join a community of girls and women empowered through ICT knowledge and tech skills. More information can be found [here](https://www.equals.org/cisco-equals-learning-space).

On 9 March, within the context of the Special Session on Digitally Empowered Generation Equality in the wake of COVID-19, the ITU Europe Office launched the ITU/UN Women report on [Key challenges and opportunities in empowering women and girls through ICTs](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2021/Gendered%20Digital%20Divide/21-00145_2f_Digitally-Empowered-generation-equality_EV4-no-isbn.pdf?csf=1&e=Zhzrpf).

Countries from Latin America benefited from three editions of the online training course on [Women Leadership in the Telecommunication and ICT sector,](https://academy.itu.int/training-courses/full-catalogue/liderazgo-femenino-en-el-sector-de-las-telecomunicaciones-y-las-tic-0) which was organized in March 2021, in coordination with EQUALS Global Partnership and CITEL. The [trainings](https://ituint.sharepoint.com/sites/TDAG/Shared%20Documents/TDAG-21%20%2825-28%20May%202021%29/Doc%202%20-%20to%20be%20updated%20by%2019%20April/%28https%3A/academy.itu.int/index.php/training-courses/full-catalogue/liderazgo-femenino-en-el-sector-de-las-telecomunicaciones-y-las-tic%20%29) were attended by almost 180 participants from 17 countries from Latin America.

The EQUALS in Tech Awards, hosted by the [EQUALS Global Partnership](https://www.equals.org), recognize innovative solutions aimed at closing the digital gender gap. The nominations for the eighth EQUALS in Tech Awards 2021 was open in May 2021 and until now, over 120 nominations have been received from 34 countries representing the private sector, civil society, governments and academia. The ceremony of the awards will be held virtually as part of the Internet Governance Forum on December 2021.

In September 2020, and in partnership with the Enhanced Integrated Framework (EIF) and UNOPS, ITU launched a cooperative project to enhance the digital ecosystem and build digital skills for women in Least Developed Countries (LDCs). The project is benefiting women in Burundi, Ethiopia and Haiti. A total of 32 policies, strategies and regulations related to the digital economy have been assessed on their gender responsiveness. The regulations include the following categories: international development instruments, national digital policies, and national laws and regulations. Moreover, activities with women officials in the three countries will be linked to the recently launched Network of Women (NoW) initiative.

The project’s capacity building focus provided female entrepreneurs and workers with an in-depth understanding of the information and digital tools needed to improve their readiness and competitiveness in the international market. Ninety-eight per cent of women who participated in capacity building activities agreed that attending the workshops improved their understanding and knowledge on how digital skills and technologies can increase the competitiveness of their business/professional horizon. Ninety-eight per cent also found the learning sessions useful for their work.

This joint project is a contribution to the [EQUALS Global Partnership](http://www.equals.org/) and part of EIF's [Empower Women, Power Trade](https://www.enhancedif.org/en/empower-women-power-trade) initiative.

In January 2021, BDT launched the [Network of Women @WTDC](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/NoW/Pages/default.aspx): The overarching aim of the NoW4WTDC initiative is to increase the number of women participating in ITU-D meetings as well as taking up leadership roles, such as committee chairs, working group chairs and other management roles related to processes in preparation of the WTDC itself, and beyond. As part of the programme, ITU launched the global mentorship programme on 28 May 2021 at the NoW4WTDC side event during the Telecommunication Development Advisory Group (TDAG) meeting and called for mentees on 24 June 2021 at the Global Symposium of Regulators (GSR) 2021 - NoW4WTDC session.

In September 2021, a fireside programme was announced. The six fireside discussions will give participants the chance to get inspiration from ITU’s work, know the processes and learn from other delegates as well as role models. Each fireside discussion will be organized in coordination with the ITU Regional Offices to ensure members are engaged in shaping the discussion and programme.

The network will also establish an Advisory Board composed by one representative per region, through the consultations under the umbrella of the respective Regional Telecommunications Organizations (RTOs).

On 5 May 2021the [Network of Women (NoW) Europe](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Projects/Gender/About.aspx) held a virtual [**Get Together**](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Projects/Gender/About.aspx) at the CEPT COM-ITU meeting where it discussed next steps as well as reflected on the Girls in ICT Day 10 year anniversary celebration that took place on 22 April 2021. Several national NoWs organized Get Togethers in the month of April 2021 in celebration of the Girls in ICT Day 10 year anniversary. On 4 June 2021 and 9 September 2021 the Network of Women (NoW) for Europe organized two virtual leadership trainings for all NoW Europe women.

In September 2021, the [**Africa Network of Women for WTDC (Africa NoW4WTDC)**](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/NoW/Pages/Africa/default.aspx), with support from the ITU Regional Office for Africa, invited members to a [webinar](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/NoW/Pages/Events/Regional/Africa/2021_09.aspx) on “[An introduction and overview of the ITU Development Sector](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/NoW/Pages/Events/Regional/Africa/2021_09.aspx)”. The webinar was the first in a series of topical regional webinars through which the network in Africa is planning to engage women in the work of the Development Sector in preparation for WTDC.

In Asia and the Pacific, the Girls in ICT Day Celebration Thailand was organized virtually from August to September 2020, in partnership with the government, UN agencies and private sector companies. Attended by nearly 300 girls and young women from remote provinces, the event provided them with opportunities to gain foundational knowledge on AI, cybersafety, e-agriculture, e-commerce and leadership. In 2021, Girls in ICT Day celebration was organised virtually, in Indonesia, Malaysia, Thailand, Bangladesh and Pakistan and implemented training sessions on coding, child online protection and online safety with partners, such as APCICT/UNESCAP, UNESCO, UNICEF, GSMA, CISCO, Telenor, Microsoft. The Girls in ICT day celebration were also represented and supported by Generation Connect Asia and the Pacific members (GC-ASP) to promote STEM amongst girls and young woman and over 1 300 girls participated on capacity building activities.

In October 2020, the ITU Arab regional office, in collaborating with the Communication and Media Commission of Iraq, organized a workshop on Empowering and Supporting Digital Skills for Women in Iraq. The workshop was held as part of ITU-UNESCO Digital Inclusion Week during 25-30 October 2020 and aimed at raising awareness among relevant stakeholders in Iraq on the importance of equipping girls and women with digital skills as key towards their digital inclusion. In addition, ITU was invited by the government of Palestine to support the Girls in ICT activities in 2020 and 2021, including on the topics of e-coaching, Fem Tech talks, Women entrepreneurs, and skills required to land a career in tech- STEM learning.

In 2020 and 2021, many active partners in the Arab countries contributed to the Girls in ICT Day celebrations and organized virtual activities on digital skills.

The global official celebration of the [Girls in ICT Day 2019](https://www.girlsinict.org/) took place in Addis Ababa, Ethiopia, on 24 and 25 April, and in collaboration with AU Commission and UN sister agencies, such as UN Women, UNDP, UNECA, as well as Huawei Ethiopia and Ethio Telecom. The celebrations in Addis Ababa included 250 high school girls at the AU Commission headquarters on the day itself. This was preceded by visits to two schools in Bishoftu outside Addis Ababa.

During the 2020 Girls in ICT Day celebrations in the Africa region, ITU teamed up with African countries to organize online events to celebrate Girls in ICT Day celebrations virtually. Despite the COVID-19 global pandemic, many active partners of this global movement have made remarkable and inspiring efforts to transform their on-site events into exciting virtual activities to celebrate [Girls in ICT Day 2020](https://www.girlsinict.org/), effectively demonstrating the power of technology.

In Asia and the Pacific, ITU was invited by the government of Afghanistan to support the activities for the preparations of the EQUALS Afghanistan programme. An information session was organized in January 2021, with the support of the First Lady of Afghanistan, ATRA, Ministry of Communications and IT, UNRC Afghanistan, UNU and UN Women.

### Indigenous people

Since 2005, the ITU-D Digital Inclusion group has developed a [capacity building programme for indigenous communities](https://www.itu.int/en/ITU-D/Digital-Inclusion/Indigenous-Peoples/Pages/default.aspx). Developed in collaboration with *El Fondo para el Desarrollo de los Pueblos Indígenas de América Latina y El Caribe* (FILAC), the objective is to empower indigenous people and communities through technology and thus support their educational, social, and economic development, and to contribute to the self-sustainability of indigenous communities and their cultural legacy. From 2018 to 2020, almost 550 indigenous men and women (53 per cent men, 47 per cent women) benefited from training on innovative communication tools for strengthening ICT knowledge of indigenous communities - with a special focus on how to develop, manage and operate an indigenous community radio network, and (blended training) on the [Training Programme for Technical Promoters in Indigenous Communities for the Generation, Development and Maintenance of Communication and Broadcasting Network Technologies](https://youtu.be/iPgLFQQAdhU).

In 2018 and 2019, side events were co-organized during the Permanent Forum at the UN in New York to raise awareness of the challenges and opportunities of indigenous communities and the enabling role of ICTs.

In 2020 and 2021, in response to the COVID-19 pandemic, the online course on innovative communication tools, was redesigned to include a dedicated module on emergency communications, designed for indigenous community communicators. The module included an interactive session with indigenous community communicators to exchange on the indigenous community experiences during the pandemic.

In order to continue contributing to the digital inclusion of indigenous communities, the Action Plans and Resolutions adopted during the last World Telecommunication Development Conferences (WTDC) considered that ITU should continue its efforts to respond to the special needs of indigenous peoples regarding the knowledge, use and equitable access to new communication technologies and ICT, specifically mentioned in Resolution 68 of the 2017WTDC.

Considering the interest expressed in the topic, in 2021 ITU has been developing the following activities:

1. Completion of the second and fourth course (supply of electrical energy and electronic systems, and radio frequency, telecommunications and community networks) of the “Training Program for Technical Promoters in Indigenous Communities in Telecommunications and Broadcasting”.

2. Completion of the third and fifth course (radio frequency, telecommunications and community networks and Sustainability in telecommunications and radio broadcasting projects) of the “Training Program for Technical Promoters in Indigenous Communities in Telecommunications and Broadcasting”.

3. Development and updating of the content of the online training course “Innovative communication tools to strengthen indigenous communities, with a focus on how to develop, manage and operate a network” and on the ITU website for Indigenous Peoples, based on new and face-to-face and online trainings for Indigenous Peoples.

4. Preparation of an implementation plan for the Virtual Training Camp

5. Revision of the content of the course on community Wi-Fi networks of the Virtual Training Field of the “Training Program for Technical Promoters in Indigenous Communities in Telecommunications and Broadcasting”.

**Youth**

In 2020 the [Generation Connect](https://www.itu.int/generationconnect/) global initiative was launched, which seeks to include the voice of youth and promote their meaningful engagement in digital transformation. Generation Connect is the overarching initiative of the ITU Youth Strategy on the journey to WTDC and beyond. The three pillars of the ITU Youth Strategy are: Empower, Engage and Participate.

The implementation of the ITU Youth Strategy has been supported with the establishment of a new ITU youth task force and a Generation Connect Global Youth Summit is planned for WTDC. ITU has appointed 37 youth focal points from BDT, TSB, BR and the General Secretariat in ITU headquarters, as well as ITU regional and area offices, to effectively coordinate and mainstream efforts across ITU, related to the implementation of the ITU Youth Strategy. The task force has been divided in three working groups, based on the ITU Youth Strategy pillars and they have met on a regular basis since October 2020.

In line with the ITU Youth Strategy, youth from each region have been competitively selected to contribute to the preparatory process for WTDC and the Regional Preparatory Meetings (RPMs). Six Generation Connect Regional Youth Groups were established and presented during the different RPMs, and they each developed a document providing their views on regional priorities, as well as challenges and opportunities.

The Generation Connect Visionaries Board was convened to offer strategic high-level guidance to ITU youth-related work as ITU implements the Youth strategy and advocates for meaningful youth engagement. The Generation Connect Visionaries Board consists of one ITU representative, 8 young leaders and 8 high-level appointees, working together towards the board’s strategic objectives. The first meeting of the Generation Connect Visionaries Board was held on 14 April 2021, and the second meeting was held on 8 September 2021.

Since March 2021, ITU is the new co-chair of the United Nations Inter-Agency Network on Youth Development (IANYD) for a one-year mandate. IANYD is a network consisting of UN entities, represented at the headquarters level, whose work is relevant to youth. The Network aims to increase the effectiveness of UN work in youth development by strengthening collaboration and exchange among all relevant UN entities.

In April 2021, ITU conducted a side event at the ECOSOC Youth Forum called ‘Generation Connect: Young People Shaping the Digital Agenda’, which was co-organized with the UN Major Group for Children and Youth. The event was also supported by the Youth Science-Policy Interface (SPI) Platform, United Nations Inter-Agency Network on Youth Development (UN IANYD) Youth Caucus and the Netherlands with their Youth at Heart Strategy. In April 2021, ITU also co-led in the thematic session: Peace & Inclusion - SDG 10 & SDG 16, organized by UNODC, Global Youth Caucus, ITU, UNESCO, UNICEF and OSGEY.

In June 2021, during ITU’s Global Symposium for Regulators [GSR], a side event focused on youth was held. ‘Generation Connect @GSR: Building a Digital Future’ was the first event in GSR’s history to host a conversation between young people and the international regulatory community. On 6 July 2021, during ITU’s Emerging Technology week, a session themed ‘Generation Connect: Developing Technology to Connect and to Deliver Quality Education for Youth’ was co-designed and co-delivered by Generation Connect Regional Digital Youth Envoys and the GC team.

In February 2021, Generation Connect Virtual communities were launched on Facebook and LinkedIn. Information on different ITU youth engagement activities is being shared on a weekly basis, as well as other initiatives, such as the Kofi Annan Changemakers Initiative.

Youth have been visible throughout the ITU’s Road to Addis series. On 12 August 2021 [International Youth Day], during ‘Youth2Connect: Empowered Youth Shaping the Digital Agenda’, young leaders alongside high-level experts discussed how to further empower and engage youth in the universal connectivity agenda. Generation Connect also partnered with the Office of the Secretary-General’s Envoy on Youth and Twitter to host a session on youth digital innovation during the #YouthLead Innovation Festival in August 2021.

The Generation Connect Youth Summit is planned for 4-5 June 2022, preceding WTDC. A Youth Summit Co-Design Team has been assembled, with the team of 41 members composed of: Generation Connect Regional Youth Envoys, Generation Connect Visionaries Board Members, ITU Regional Focal Points, ITU Youth Task Force Members and Generation Connect Video Pitch Competition Winners. Three co-design workshops have been held towards this effort during August and September, 2021.

As a result of consultations with Generation Connect Regional Digital Youth Envoys, Generation Connect Visionaries Board Members and the Regional Youth Focal Points, the Generation Connect team has developed a ‘July 2021 – July 2022’ plan outlining the next phase of ITU’s youth engagement on the road to WTDC and the preceding Generation Connect Global Youth Summit.

### Older persons

To support ITU members in facing the global digital challenge (UN Report 2019 predicts over 2 billion people aged 60 and above in the next 30 years) ITU-D also designed and developed a report on the topic of “Aging in a digital world – *from vulnerable to valuable*”. The resource aims at providing ITU membership with a holistic vision on the global aging of the population and related socio-economic impact, as well as on the challenges and opportunities that can result from appropriate policies and strategies on digital inclusion for older persons. A video tutorial on the topic was developed and will be made available in Arabic, French, Chinese, English, Russian and Spanish.

Additionally, a training course on the topic “*ICTs for better ageing and livelihood in the digital landscape”* was developed in 2021.

The ITU is also contributing to the UN Decade of Healthy Aging work, through the development of a policy brief on the social isolation and loneliness faced by older persons and the role that technology can play to address this challenge.

For more information on ITU's work and resources in this area [click here](https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/ageing-in-a-digital-world/default.aspx)**.**

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| **REGIONAL INITIATIVES**Asia-Pacific RI2: Harnessing ICTs to support the digital economy and an inclusive digital society* ICT Accessibility Assessment for Asia and Pacific Region was developed in 2020; including on-line trainings in ICT accessibility, web accessibility and in inclusive digital communication;
* Awareness on ICT accessibility was raised during regional events on the topic of accessibility, including the event on “Digital Resilience for Guaranteeing an Inclusive Society” organized by UNITAR CIFAL in 2020;
* More than 80 events were held in the region to celebrate Girls in ICT Day. In Thailand, for example, girls and young women were trained on Agritech and Entrepreneurship in partnership with the government, UN agencies, academia, and industry;
* In 2021 alone, nearly 1400 girls and young women participated in the Girls in ICT Day celebrations and benefitted from the skills training programmes in Bangladesh, Indonesia, Malaysia, Pakistan and Thailand. The celebrations and programmes were organized in close collaboration with the governments, UNCTs, private sector and academia.

Americas RI4: Accessibility and affordability for an inclusive and sustainable Americas region* Accessible Americas – ICT for All knowledge development platforms were held in 2018, 2019 and 2020, raising the awareness of over 700 regional policy makers (including ITU members and stakeholders);
* The Web Accessibility “Internet for @ll” educational programme was implemented in Guyana in 2020, allowing the Guyana Government to ensure that all its public websites are accessible and to acquire capabilities in web accessibility;
* ICT accessibility trainings were delivered face to face or on-line to about 400 persons, of which over 300 validated their knowledge and obtained ITU certification on the topic;
* In 2020, ITU delivered equipment to assist visually impaired persons in Dominica;
* Between 2018 and 2021, over one thousand (1000) Indigenous representatives benefited from ITU’s indigenous knowledge development programme, composed of tutor led on-line and blended trainings aiming at leveraging indigenous people’s digital skills through which ITU is able to support the social economic development and self-sustainability of indigenous communities.

Arab States RI3: Digital financial inclusion* Assistance was provided to Egypt, Sudan and Iraq, to formulate their national ICT Accessibility Policy;
* Over 90 partners contributed to the annual Digital Inclusion Week, organized in partnership with UNESCO in 2018, 2019 and 2020 (ongoing in 2021). The week included capacity building and awareness raising activities in addition to challenges on a variety of themes pertaining to ICT accessibility for persons with disabilities, digital financial inclusion, gender and youth ;
* A face to face “Train the trainers” was developed and customized for the Arab Region on “Accessible Digital Content and Remediation for the stakeholders delivering digital financial services” and delivered to policy makers in 2018 in Cairo, Egypt.

Africa RI2: Promotion of Emerging Broadband Technologies and RI 4: Strengthening human and institutional capacity building* Awareness was raised to leverage regional capacity on ICT accessibility in several regional related meetings, including the Inclusive Conference in Africa (2020, online);
* On-line trainings in ICT Accessibility and Web Accessibility were delivered in French (2020);
* Five regional workshops were delivered in English and French to ITU members and stakeholders to strengthen policy makers’ regional capacity in ICT accessibility and to teach them how to develop in country self-assessments to further monitor implementation (2021);
* ITU regional assessment and a report on ICT accessibility for the Africa region were delivered, with related capacity building workshops (2021);

Europe RI3: Accessibility, affordability, and skills development for all to ensure digital inclusion and sustainable development* Together with UN Women, a 2021 regional study on *Digitally Empowered Generation Equality: Women, Girls and ICT in the context of COVID-19* was carried out in selected countries, leading towards targeting specific gaps in the region through projects and technical assistance;
* **Funded by the EU Horizon 2020 Framework Programme, the EQUALS-EU initiative was launched in 2021, with the aim to build capacity in gender-inclusive innovation in Europe and partner countries worldwide with an ambitious and value-driven agenda;**
* The joint ITU and European Commission *Accessible Europe* initiative has attracted all relevant stakeholders from the EU and non-EU countries, providing a unique platform for sharing experiences, fostering innovation, and facilitating technical assistance to countries in need;
* The Accessible Europe – ICT for all knowledge development platforms were held in 2018, 2019, 2020, and 2021, raising awareness and leveraging capacity in implementing ICT accessibility as a key enabler to build accessible environments and communities to over 2 000 regional policy makers and stakeholders;
* A number of resources were developed and/or provided to support ITU members in the implementation of ICT accessibility, and a self-paced online training on ICT accessibility was promoted across the region with the engagement of over 200 stakeholders;
* A regional competition on digital innovative solutions for accessible Europe was organized. ITU received 97 submissions from 29 different countries and the winners received a special recognition of Accessible Europe by ITU for their achievements. They will be included in the ITU Smart Incubator's capacity building program, becoming active participants in the policy discourse, standardization, and programming processes of ITU. A number of papers on ICT accessibility were presented to advance the implementation of the work in the field of artificial intelligence, broadcasting, standards and procurement;
* An ICT Accessibility Assessment for the Europe Region was developed to show the progress made and to identifying the gaps to be addressed by the stakeholders to achieve ITU's Target 2.9, on accessibility;
* Assistance was delivered to Serbia to develop their national assessment on ICT accessibility.

CIS RI2: Use of telecommunications/information and communication technology to ensure inclusive, equitable, quality and safe education, including the enhancement of women's knowledge of ICTs and e-government.* Targeted assistance delivered to Kyrgyzstan to build capacity of informatics teacher in rural and remote areas of the country; and to Armenia to support their virtual reality/augmented reality lab in Echmiadzin;
* The ICT accessibility overview and regional baseline assessment for the CIS region was developedand finalized in 2021. This assessment provided ITU members from the CIS region with an overview of the existing regional and national laws, policies and strategies, as well as implementation and related impact;
* Two online courses on Web Accessibility and ICT Accessibility were developed in the Russian language and are available on the ITU Academy platform.
* ITU, jointly with IT Park Uzbekistan and the support of the Ministry for Development of Information Technologies and Communications of Uzbekistan, is finalizing the implementation a project on the creation of an IT training center for young people with deafness and hearing loss in Uzbekistan. Partners developed technical requirements for government information portals in order to create web-accessibility for people with special needs and piloted them with two government portals.
* ITU continued to support enhancement of specialized centers for children with disabilities in Belarus (two centers in Minsk and Vitebsk under the Belarus State Academy of Communication) and in Kyrgyzstan (one center in Bishkek under the Institute of Electronics and Telecommunications) created within RI CIS 2 of WTDC-14. In September 2021, experts from the Specialized Training Centre for persons with disabilities in Bishkek and teachers from the Institute of Electronics and Telecommunications held an advanced training course for secondary IT schools teachers in Bishkek. The course focused on a methodology to teach people with disabilities in using telecommunications / ICT and adaptive technologies. These courses are contributing to developing inclusive education in the country.
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| **STUDY GROUPS**ITU-D Study Group Question 7/1 dealing with telecommunication/ICT accessibility for persons with disabilities and persons with specific needs finalised [its report](https://www.itu.int/en/myitu/Publications/2021/07/06/12/15/Access-to-telecommunication-and-ICT-services-by-persons-with-disabilities) for the working period 2018-2021 to the next WTDCThe Accessible Europe event held in March 2021 included the contribution of Question 7/1 Rapporteur. Several Digital Inclusion (e.g. Road to Addis) and Equal events saw the contribution of Question 7/1 Vice Rapporteur. In response to COVID-19 the I[TU-D study groups – Reflections on COVID-19](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/covid19/webinars/1stSeries.aspx) webinars were held in 2020, followed by a webinar on *Digital accessibility during COVID-19 and recovery period: An imperative to ensure inclusive societies in the digital world*. Speakers analysed the importance of ICT accessibility implementation and the related impact of COVID-19 on the lives of people with disabilities. Based on discussions held during the webinar, an *ITU News* article on the need for increased digital accessibility during COVID-19 and beyond was issued in June 2020. A dedicated knowledge development session on ICT accessibility fundamentals was held for a group of ITU-D SG1 Rapporteur Group participants in October 2019. This helped ITU Member States to understand key definitions and trends related to ICT accessibility policies and strategies, identify digital accessibility requirements, envision ICT accessibility as a business opportunity, and understand the benefits for all involved stakeholders.  |

## 4. Digital innovation ecosystems: Accelerating digital transformation through nurturing entrepreneurship-driven innovation and competitive digital ecosystems

**Innovation challenges**

The [innovation challenges](https://www.itu.int/en/ITU-D/Innovation/Pages/ITU-Innovation-Challenges.aspx) served as an open platform for people to present their ideas and projects, which can contribute to the digital transformation of individuals, communities and society through innovation. It is a life-[changing experience](https://news.itu.int/itu-innovations-challenges-a-life-changing-experience/) for many of the participants. Through [cocreate.itu.int](https://cocreate.itu.int/), the [2019 edition](https://www.itu.int/en/ITU-D/Innovation/Documents/YILF%202019%20Outcome%20Report%20.pdf) attracted over 140 projects and co-creation from 1 200 people from 400 cities. One of the 2019 winners from South Africa, a Durban-based entrepreneurial technology company, was recognized for excellence at ITU Telecom World 2019, Budapest, Hungary. The company received USD 1.5 million to replicate its work in other towns in the Durban area and received commitment of almost USD 10 million for “Wholesale Financing” to commercialize its innovations. The 2020 ITU Innovation Challenges is the second edition of this competition and was organized in partnership with [EQUALS](https://www.equals.org/) and [INPUT Hungary](http://foreign.inputprogram.com/?lang=en). Over 60 selected winners from both editions went through boot camps [to refine and support their projects](https://news.itu.int/itu-innovation-challenges-ugandan-tech-solution-helps-deliver-clean-water-for-all/). In 2021, three challenges were conducted: the Global South Covid-19 digital innovation challenge with UNOSSC, the generation connect video pitch challenge with Generation Connect and the Youth Africa innovation in partnership with ATU. Up to 25 winners of the Global South challenges will be provided up to $25,000 seed funds and mentorship to scale-up their innovation.

### Innovation forums and knowledge sharing

The [Innovation Forums](https://www.itu.int/en/ITU-D/Innovation/Pages/Global-Innovation-Forum.aspx) empower participants by sharing insights, relevant case studies and providing networking opportunities with a community of practice to understand how to mainstream sustainable ecosystems that accelerate digital transformation.​ Young ICT leaders forums were held in 2018 and 2019 in Busan, Republic of Korea. [YILF2018](https://www.itu.int/en/ITU-D/Innovation/Documents/Young%20ICT%20LEdaers%27%20Forum%202018%20%20Busan%20-Report.pdf) and [YILF2019](https://www.itu.int/en/ITU-D/Innovation/Documents/YILF%202019%20Outcome%20Report%20.pdf) offered a space where youth change-makers in ICTs can network, connect, and enhance their innovative ideas to create smart communities. In 2019, through the regional innovation forums for the Arab States region and the Africa region (held in Brazzaville and Cairo), policy-makers, academics, innovators, and ecosystem builders from 16 countries discussed how to develop agile and collaborative ecosystems conducive to digital innovation.

The first edition of the Global Innovation Forum (GIF) was also held in 2019 as the [Global Ecosystem program](https://www.itu.int/en/ITU-D/Innovation/Pages/Innovation-Ecosystem-Program-.aspx)me at ITU Telecom Budapest, Hungary. The second edition, held virtually in 2020, included regional perspectives for five regions (Africa, Americas, Arab States, Asia-Pacific and Europe). [GIF2020](https://www.itu.int/en/ITU-D/Innovation/Pages/2020-ITU-Global-Innovation-Forum.aspx) highlighted the importance of entrepreneurship-driven innovation and digital ecosystems in the context of a global pandemic. It brought together 175 experts and 700 participants to mainstream sustainable digital innovation.

ITU also organized innovation sessions at the WSIS forum in 2018, 2019, 2020 to discuss technology trends accelerating digital transformation, national experience sharing, and an innovation culture to accelerate achievement of the SDGs. The second edition of the Global Innovation Forum is planned to for 25 to 29 October 2021 and will be virtual.

### Innovation and ecosystem capacity development

Innovation and ecosystem capacity development aims to build stakeholders' capabilities in innovation and entrepreneurship, enabling them to assess the systemic issues of digital ecosystem and help them develop targeted intervention to make them sustainable and competitive.

In 2018 and 2019, through capacity building efforts at key events and through a [curriculum on the ITU academy](https://www.itu.int/en/ITU-D/Innovation/Pages/Digital-Innovation-Ecosystem-Courses.aspx), over 100 policy-makers and ecosystem champions were trained with knowledge, skills and tools on strengthening their own digital innovation environment. In 2020, building on the ITU innovation toolkit series, a new [toolkit for developing sustainable ICT-centric innovation ecosystem projects](https://www.itu.int/dms_pub/itu-d/opb/inno/D-INNO-TOOLKIT.2-2020-PDF-E.pdf) was launched. This toolkit brings additional features and insights on how stakeholders can diagnose and develop flagship projects that effectively nurture ICT-centric innovation within digital ecosystems. In 2020, an [online curriculum](https://www.itu.int/en/ITU-D/Innovation/Pages/Digital-Innovation-Ecosystem-Courses.aspx), with an initial set of four courses, has been developed and piloted through the ITU Academy. Over 90 people from 60 countries were trained with these new online instructor-led courses. Additional online content development is envisioned through partnership with other organizations and synergies with other ongoing projects within ITU. In 2021, BDT expanded its basic content on ecosystem development to six languages and is running this for countries. BDT partnered with SMART Africa and other organizations to extend the curriculum available with new contents and targeting specific stakeholders at the regional and national level.

Additionally, six regional good practices “accelerating innovation, entrepreneurship and digital transformation” have been generated and will be published. Each report aims to showcase how digital transformation can be accelerated by innovative practices nurturing entrepreneurship-driven innovation that creates economic development.

### Ecosystem development strategies, roadmaps and projects

Through technical assistance, ITU is helping countries get an accurate diagnosis of their digital innovation ecosystems' status and to develop strategies to inform national policies. Technical assistance was provided to Mali, Montenegro, Niger, Trinidad and Tobago, Georgia, Serbia, and the Philippines to draft digital innovation profiles, which offer an ecosystem blueprint to accelerate digital transformation to leverage entrepreneurship and innovation.

ITU also works with countries to develop proven blueprints or mechanisms enabling digital innovation acceleration at the national level​. ITU is currently working with South Africa in the development of African Digital Transformation Centre to help accelerate digital transformation across key sectors of the economy. Additional technical assistance to countries is planned through partnership and projects with other UN agencies such as [UNFPA](https://www.itu.int/en/ITU-D/Innovation/Pages/Nurturing-A-Digital-Innovation-Ecosystem-That-Accelerate-Youth-Resilience-and-Empowerment-In-Benin.aspx) and United Nations Office for South-South Cooperation ([UNOSSC](https://www.itu.int/en/ITU-D/Innovation/Pages/Scaling-up-Digital-Innovations-through-South-South-and-Triangular-Cooperation.aspx)).

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| **REGIONAL INITIATIVES**Africa RI1: Building digital economies and fostering innovation in Africa* Funding was secured to establish the first [digital transformation ecosystem accelerator](https://www.itu.int/en/ITU-D/Innovation/Pages/Digital-Transformation-Accelerators.aspx), also known as the African Digital Transformation Centre for South Africa;
* Funding was secured for a project to nurture digital innovation ecosystem that accelerate youth resilience and empowerment in Benin;
* Through extensive consultative processes with multi-stakeholders from academia, entrepreneurs, entrepreneurial support networks, financiers, public and private sectors, ITU provided technical assistance for the development of digital innovation profiles for Mali and Niger. Interviews took plane in 2021 and the reports will be launched in Q4, 2021.
* The [ICT-centric innovation ecosystem country review for Kenya](https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Kenya%20Country%20Review%20-%20ICT%20centric%20Innovation%202019.pdf), published in 2019, offered a comprehensive analysis and recommendations on how future ICT policies can include innovation and digital entrepreneurship policies and programmes;
* Capacity building on sessions on building innovation and entrepreneurship ecosystems were provided to a number of public and private organizations, universities, and research institutions in the Republic of the Congo, in October 2019.
* Digital Innovation Ecosystem Trainings in partnership with the Smart Africa Secretariat are ongoing. This six-session curriculum is designed to empower policymakers, academics, innovators and ecosystem-builders who wish to build thriving entrepreneurial communities that can navigate technological revolutions and create competitive ICT industries. Over 80 participants have been accepted in the program and are participating.

Arab States region RI5: Innovation and EntrepreneurshipIn direct response to the expected results of the ITU Regional Initiatives, a series of actions have been undertaken during the period of 2018-2021 with the aim of strengthening capacities of the Membership in field of:* Direct assistance supporting development of ICT-centric innovation ecosystems;
* Capacity development and community building.
* Incubator managers and other ecosystem stakeholders in Djibouti and Mauritania were equipped with the methodology and tools to support growth and entrepreneurship. The main principles and good practices of business incubation were shared and discussed;
* Capacity building sessions on building innovation and entrepreneurship ecosystems were provided to a number of public and private organizations, universities, and research institutions in Egypt;
* Regional challenges were organized with an array of partners including UNESCO, UNDP, UNICEF, UNTIL, WHO, Etisalat Egypt, GSMA and others. The first challenge in 2019 titled *decoding health challenge* focused on promoting innovation in the use of big data for health. The second challenge in 2020 titled *AI for Development* focused on promoting AI to achieve the SDGs. In both challenges 4 winners were selected;
* The ARTECNET Project was launched to establish a network for incubators and techno parks in the Arab region: A network involving 22 technoparks and incubators was established to promote partnerships and collaboration between them;
* The 5th ARTECNET meeting took place in Tunis , Tunisia, in April 2018;
* Study-days on Innovation Ecosystems were organized to support Entrepreneurship, in Tunisia, in November 2018;
* The ITU Regional Workshop on *Bridging the Digital Innovation Divide* took place in Cairo, Egypt, in October 2019;
* The 6th meeting of the Arab Techno parks and Incubators Network members and managers took place in December 2019, in Tunis, Tunisia;
* The ITU Regional Innovation Forum for the Arab Region: Mainstreaming competitive digital innovation ecosystems in the age of COVID, took place in October 2020;

Americas RI5: Development of the digital economy, smart cities and communities and the Internet of Things, promoting innovation* The [Americas ICT Innovation Week](https://www.itu.int/en/ITU-D/Regional-Presence/Americas/Documents/EVENTS/2019/24013/Practical%20Information%20Innovacion%20Uy2019_En.pdf), under the theme of *smart rural communities* was organized in Uruguay. The adoption and use of new technologies to create a sound and responsible agriculture sector to enable future smart rural communities was analysed and discussed;
* An online training course on the role of ICT for smart sustainable cities was provided to the Bahamas, Barbados, Guyana, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. This initiative was implemented in partnership with CITEL/OAS;
* A 2018 workshop was held in the Caribbean on 5G, IoT, m-Payment, emerging technologies, eco-systems, and regulation.
* ITU is assisting Trinidad and Tobago in the development of a country innovation review to inform national policies.

Europe RI5: ICT-centric innovation ecosystems* The Digital Innovation Profile for Montenegro was finalized in preparation for a national project;
* The Digital Innovation Profile for Georgia is under finalization, building solid foundations for the national strategy fostering digital innovation in specific sectors;
* The 2019/2020/2021 Regional Innovation Forums together with the 2021 <https://www.itu.int/en/myitu/Publications/2021/06/24/09/14/Regional-good-practices----Europe> on Digital Innovation Ecosystems in Europe continue to build human capacities and facilitates the exchange of practices, while fostering partnerships in the field of ICT centric innovation ecosystems.

Asia-Pacific region:* A regional study on the status of digital innovation in the Asia-Pacific region has been undertaken and will be published in 2021;
* ITU is assisting the Philippines in drafting a digital innovation profile to inform national policies. Interviews were conducted during 2021, and the first draft is expected to be completed by the end of this year.
* In collaboration with the Government of India, ITU is organizing a series of information sessions on digital innovation. Launched at the RPM-ASP in March 2021, the first session took place on 9 September 2021 on India Stack, followed by the session on 29 September on revolutionising digital financial services, organized in collaboration with TSB, ITU members and with focus on ITU’s initiative, FiGi.
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| **STUDY GROUPS**The *ICT Innovation Week* event report contributed to the work of the ITU-D Study Group 2 ([Question 1/2](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ01.2&stg=2) *Creating smart cities and society: Employing information and communication technologies for sustainable social and economic development*) rapporteur group meeting. |

## 5. Digital services and applications: Creating transformative digital strategies and application services

### Digital Government

ITU is collaborating with the Ministry of Foreign Affairs of the Republic of Estonia (MFA Estonia), The Federal Ministry of Economic Cooperation and Development of the Federal Republic of Germany (BMZ), and the Digital Impact Alliance (DIAL) at the UN Foundation to accelerate digital transformation and digitalization of government services for the achievement of Sustainable Development Goals (SDGs), particularly in low-resource settings. The collaboration will assist countries in learning about and implementing scalable digital services and applications in a cost efficient, accelerated and integrated manner.

### Scaling up digital health

The impact of the ITU-WHO Be He@lthy, Be Mobile Initiative continues to grow. It now works with 11 countries to tackle issues as diverse as cervical cancer, diabetes, and tobacco use. In total, more than 3.5 million people have benefited from this programme. Deliverables of the Be He@lthy, Be Mobile initiative include USD 1.8 million raised from three new partners (Roche, Discovery/Vitality, Santen). Continued support was provided to Egypt, India, Philippines, Senegal, and Tunisia, and implementation started in Burkina Faso and Sudan.

In 2018, ITU co-organized with WHO AFRO and Smart Africa a Digital Health Hub on the occasion of the Transform Africa Summit. The Hub featured a number of policy dialogues and best practice for digital health implementation in the Africa region. A [handbook](https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-E_HEALTH.14-2019-PDF-E.pdf) on how to implement mTB-Tobacco has been published and a toolkit developed, and an [mHealth Innovation Hub](https://www.itu.int/en/ITU-D/ICT-Applications/Pages/EU-mhealth-hub.aspx) for the Europe region was established with the European Union and WHO to serve as a platform to share best practice and provide a one-stop shop to access guidance on mobile health implementation.

In 2018, assistance was provided to Guyana in collaboration with Pan American Health Organization (PAHO), with the development of an e-health national framework that included the development of a national e-health vision document, a national e-health action plan, a national monitoring framework proposal, and an assessment on the application of the e-health toolkit in Guyana.

In 2020, following the m-Diabetes project launch in Senegal by ITU, in partnership with WHO, and in the framework of the "Be Healthy, Be Mobile" global programme, ITU/WHO set up a second project, focusing on the automatic detection of diabetic retinopathy in Senegal. The Government of Senegal, through the Ministry of Health, was provided with two digital retinographs to help support the national healthcare system in the early diagnosis of diabetic retinopathy.

In collaboration with WHO, EU and the Andalusia Public Health Services SSPA, ITU has established a European mHealth Knowledge Hub to collect and share national experiences on mHealth and to support countries and regions in setting up large-scale mHealth programmes to be possibly replicated in other regions.

The mHealth Hub aims at:

* Operationalising an mHealth Innovations for integration into the national health systems in Europe;
* Serving as a focal point for expertise on mHealth in the European Region;
* Assisting countries in implementing mHealth strategies;
* Acting as facilitator of innovation in mHealth;
* Acting as an accelerator for the EU Digital Single Market;
* Producing Knowledge Tools for health systems and services on NCDs;
* Providing a code of ethics for mHealth data.

ITU has published the Digital Health Platform Handbook that assists countries with the advancement of their national digital health system, specifically through the use of a digital health platform, or DHP. This digital platform provides the underlying foundation for the various digital health applications and systems used to support health and care services. It enables individual applications and systems to interoperate and work together in an integrated manner. It provides a central hub, linking together disparate and unconnected systems and applications, enabling faster, more efficient and more reliable information exchange, and promoting increased access to health data across a range of applications and devices.

## Building smart villages

The [Smart Village project](https://news.itu.int/leaving-no-one-behind-nigers-smart-villages-project/) to connect remote areas of Niger to the Internet was created through a collaboration between ITU and the [National Agency for Information Society (ANSI)](https://www.youtube.com/watch?v=0uYKKJg00eo) and several other organizations. The Smart Villages project is a holistic, multi-sector, and inclusive approach to improving access to essential digital services for SDGs in rural settings. It is a "gateway to rural development" through the pooling and coordination of development programs, in order to create the necessary synergy to sustain investments. It is also a Whole-of-government, Whole-of-society approach for SDG digital investments and rural digital transformation. Several Smart Villages projects are under development in Pakistan, Indonesia and the Pacific Islands. The Smart Village pilot was agreed upon among ITU, Huawei and the Universal Service Fund (USF) of Pakistan and was launched in June 2021. Similarly, as a way to advance the digital transformation and whole of government approach, the UN has been developing two Smart Islands projects in the Pacific. In partnership with OHRLLS and UNOPS, a briefing on the Smart Islands initiative was organized for the Pacific Ambassadors in New York.

### Building capacity on digital services

Training on digital health was given following a digital curriculum developed by ITU in collaboration with the WHO Africa regional office to scale up digital health in countries in the region. This also gave the opportunity for representatives from ministries of health and ICT to share experiences and lessons learned from their country implementation of digital services.

### ITU, in collaboration with WHO, has developed an online Digital Health Leadership Training course that is available on the ITU Academy. This self-paced course is designed to build capacities of a new generation of digital health leaders capable of sustaining and scaling up digital health efforts in countries. It includes 12 modules covering a wide range of topics that digital health coordinators and leaders need to be aware of, such as the introduction to digital health, governance, strategies, policies and regulations, requirements gathering, system and architecture design, interoperability, data use, health emergencies, innovations, etc. Sustainable cities and human settlements

The ITU Regional Office for Africa facilitated a workshop on Smart Society for Southern Africa, held in Dar es Salaam, Tanzania, to broaden understanding of concepts, requirements and opportunities to leverage new technologies such as IoTs, AI, big data, for countries in the Southern African Development Community (SADC).

### Collaboration with FAO on Digital Agriculture

ITU is scaling up its collaboration with FAO, following the signature of a cooperation agreement in 2019. ITU and FAO are working together to assist several countries in developing and implementing digital agriculture strategies and roadmaps to create capacities and identify priorities for digital investments to achieve agriculture sector objectives. ITU is also collaborating with FAO to support rural entrepreneurship, investment and trade in Papua New Guinea and a Smart Villages initiative in Niger. Several reports were co-published on digital agriculture with FAO on the use of digital and frontier technologies e.g., blockchain and big data for agriculture. In addition, ITU was invited to be a member of the advisory committee of the Digital Council for Food and Agriculture that will help governments to identify and maximize the potential of digitalization and establish, expand and protect farmers’ access to digital technologies. In this context, Guyana hosted the ITU/FAO e-Agriculture Strategy Development Regional Workshop for the Caribbean in 2018 in collaboration with CTU.

ITU-FAO Caribbean Hackathon #HackAgainstHunger was organized in collaboration with the Food and Agriculture Organization (FAO) in February 2018 to identify and support ICT innovative solutions, the aim being to address challenges in the areas of food and agriculture. It included two local hackathon events, in Jamaica and in Trinidad and Tobago. Jamaica won the regional event and afterwards competed in and won the WSIS Forum 2018 Special Track Global Hackathon in Geneva.

ITU and FAO conducted a study for the development of e-agriculture strategy in Chile. In 2020, ITU and FAO developed a joint report “Status of Digital Agriculture in 18 Countries of Europe and Central Asia”. In 2021, ITU and FAO organized the contest on Digital Excellence in Digital Agriculture in Europe and Central Asia, to strengthen the culture of digital innovation in agriculture. Over 500 stakeholders were identified, and 200 stakeholders engaged through the contest. A stocktaking report listing the 171 eligible practices, as well as “Digital Excellence in Agriculture Report” focusing on the technological trends, challenges and opportunities of digital agriculture in Europe and CIS, were developed.

In 2021, ITU, in collaboration with FAO is applying the "[e-Agriculture Strategy Guide](https://www.itu.int/en/ITU-D/ICT-Applications/Pages/e-agriculture-strategies.aspx)" to develop National e-agriculture strategies for Costa Rica and Honduras.

### Digital Public Goods

ITU is providing guidance on adopting whole-of-government approaches for investing in shared digital infrastructure that can lead to more rapid scale-up of digital services at less cost and greater return on investment, and how to coordinate investment to make digital public goods available that can enable digital transformation for SDGs. A whole-of-government approach is outlined in the [*SDG Digital Investment Framework*](https://www.itu.int/pub/D-STR-DIGITAL.02-2019) published by ITU and Digital Impact Alliance (DIAL).

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| **REGIONAL INITIATIVES**Africa RI1: Building digital economies and fostering innovation in Africa* The ITU-WHO joint project *Using digital health services to accelerate SDGs in the Africa region* was launched to support countries in making full and sustainable use of ICTs in health service delivery that will improve population and individual health and ensure healthy lives and well-being for all in the Africa region;
* An e-applications development workshop was held in November 2019 to identify challenges experienced during e-application development and propose ways to bridge the gap between ideation of e-applications and advancement to market entry in the Africa region;
* Baseline studies to facilitate digital financial inclusion and digital government for Ethiopia have been undertaken;
* Within the framework of the African Continental Free Trade Area (AfCFTA), a baseline assessment to support cross border digital payments has been undertaken;
* In collaboration with FAO, a Digital Readiness Assessment for Agriculture to assess the digital agriculture environment in Africa is under way;
* Building on the ITU, Estonia, GIZ (Germany), and Digital Impact Alliance collaboration to accelerate national digital transformation and the digitalization of government services for the achievement of SDGs by 2030, in Africa, EU (DG INTPA) and the Digital for Development (D4D) Hub teamed up with the Horn of Africa initiative to develop a digital government strategy and an integrated digital government services platform with the concerned countries.

Americas RI5: Development of the digital economy, smart cities and communities and the Internet of Things, promoting innovation* ITU collaborated with WHO in 2018 to produce the “Guyana National eHealth Strategy”, using the WHO-ITU toolkit for that purpose;
* The Americas ICT Innovation Week, under the theme *smart rural communities* was organized in Uruguay. The adoption and use of new technologies to create a sound and responsible agriculture sector to enable future smart rural communities was analysed and discussed;
* In 2019, a proposal for a National e-Agriculture Plan for Chile was developed.
* In 2021, a proposals for a National e-Agriculture Strategy was being developed, in collaboration with FAO, for Costa Rica and Honduras.

Asia-Pacific RI2: Harnessing ICTs to support the digital economy and an inclusive digital society* E-agriculture: In partnership with FAO, ITU supported the development of the e-agriculture strategy in Mongolia; the implementation of mobile applications in Papua New Guinea; the development of two case studies on blockchain and big data; and human capacity building activities in Papua New Guinea and Mongolia. A joint UN project, led by FAO, on supporting agriculture in areas of Papua New Guinea was also finalized;
* E-Government: Papua New Guinea and Vanuatu were assisted in strengthening their digital government frameworks;
* Training courses and workshops raised awareness of applications in areas such as smart cities, digital government, and IoT applications;
* ITU, in partnership with FAO, continued to raise awareness on application of digital technology in agriculture through E-agriculture in Action case studyseries ([Big Data For Agriculture](https://www.itu.int/en/ITU-D/ICT-Applications/Documents/Publications/Big%20Data%20for%20Agriculture.pdf)). The next edition on *Artificial Intelligence for Agriculture* is planned for release in Q4 of 2021;
* The bi-annual Digital Agriculture Solutions Forum 2020 shared experiences on the use of innovative technologies to meet agricultural goals;
* In 2021, ITU worked with Pacific UNCTs to develop 2 UN SDG fund programmes on Smart Islands, which covers 10 countries (FSM, RMI, Nauru, Kiribati, Palau, Fiji, Solomon Islands, Tonga, Tuvalu, Vanuatu) which promote a whole of government, evidence-based approach in close partnership with UN agencies. The initiative was presented to the Pacific Ambassadors in New York on 2 September 2021.
* The Smart Village initiative was launched with the Ministry of Information Technology and Telecommunication, USF and Huawei in Pakistan in June 2021. The Internet Society, private sector and UN agencies are supporting the initiative to ensure community engagement and gender mainstreaming, while linking to various sectoral digital services.
* ITU’s support has led to Vanuatu’s adoption of Smart Islands and cooperation agreement and project formulation to operationalize the initiative.

Europe RI2: A citizen-centric approach to building services for national administrations* A workshop on enhancing human life using e-services was held in Geneva to discuss emerging technologies and services, including AI and ICT accessibility;
* Cooperation between ITU and FAO was strengthened through a special session on digital agriculture strategies organized at ITU Telecom World 2019, Budapest, Hungary;
* Regional studies on national strategies for digital agriculture were elaborated for review by the Member States involved;
* A knowledge exchange event on fostering start-up ecosystems in the field of e-services was held in Prague, Czech Republic;
* A regional report on the status of digital agriculture in 18 countries of Europe and Central Asia reviewed the progress made and identified countries in need of technical support;
* ITU supported FAO in assisting Albania, Turkey and Bosnia and Herzegovina in the development of the national strategy for digital agriculture;
* In 2021 ITU-FAO, developed the guidebook on digital agriculture for accession countries;
* ITU and FAO organized the contest on Digital Excellence in Digital Agriculture in Europe and Central Asia, to strengthen the culture of digital innovation in agriculture. Over 500 stakeholders were identified, and 200 stakeholders engaged through the contest. A stocktaking report listing the 171 eligible practices, as well as “Digital Excellence in Agriculture Report” focusing on the technological trends, challenges and opportunities of digital agriculture in Europe and CIS were developed;
* The ITU/WHO/EU mHealth Innovation and Knowledge project served as the key platform to collect and share national experiences on mHealth and to support countries and regions in setting up large-scale mHealth programmes;
* Since 2020 the GOVSTACK initiative of ITU, Estonia, Germany and Dial provide the main vehicle to assist countries in accelerating national digital transformation and the digitalization of government services for the achievement of Sustainable Development Goals by 2030.

CIS RI1: Development of e-health to ensure healthy lives and promote well-being for all, at all ages* ITU developed a specialized multimedia training course in Russian on e-health for doctors and ICT staff working with medical equipment; in addition, it provided a series of online country training sessions for Belarus, Kazakhstan, Kyrgyzstan, Ukraine, and Uzbekistan with 128 specialists trained in total;
* ITU developed technical recommendations on the application of modern technical solutions in the design of e-health systems, including telemedicine networks;
* ITU advised on the regulation of infocommunication infrastructure to make cities and human settlements inclusive, safe and resilient
* Since 2018, ITU has been working on a regional Startup Central Eurasia platform, which started as a soft coordination mechanism between ICT parks and ecosystems in the CIS and neighbouring countries and by 2021 emerged into a full-scale online platform designed to foster the development of startups and SMEs working on digital health, agriculture and smart cities. The latest annual Startup Central Eurasia event attracted 350 participants, representing startups, IT parks, venture investors, and government agencies from 16 countries from the CIS region and neighbouring countries. In 2020-2021 ITU published a Startup Ecosystem Guide and delivered a series of online trainings focused on facilitating entrance of startups to the markets of neighbouring countries; over 70 startups from Armenia, Kyrgyzstan, Tajikistan, and Uzbekistan benefited from this training. Finally, in June 2021, ITU organized a “Venture Day” event to help startups raise funds, with 73 startups from 8 countries participating.
* Smart sustainable cities emerged as one of the priority areas for ITU Member States in the CIS region, with Belarus hosting an annual flagship event – Regional Forum on Smart and Sustainable Cities, organized jointly by ITU-D and ITU-T. In 2018, ITU, together with the Government of Moscow carried out a case study “Implementing ITU-T International Standards to Shape Smart Sustainable Cities: The case of Moscow” and works towards a joint project on smart cities benchmarking;
* ITU, jointly with the Ministry of Communication and Informatization of Belarus, is developing a pilot project to create a smart school in Polotsk, a historic city in Belarus. The aim of this pilot is to showcase how smart cities technologies can be deployed in a small town and contribute to bridging the digital divide.
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| **STUDY GROUPS**An [annual deliverable on a holistic approach to creating smart societies](https://www.itu.int/oth/D0717000002/) ([Question 1/2](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ01.2&stg=2): *Creating smart cities and society: Employing information and communication technologies for sustainable social and economic development*) was released in 2019. An example of architecture of a smart city is also proposed based on these core design concepts, and a summary of selected country case studies on smart cities is presented. Another annual deliverable on “Vertical applications in smart cities” was approved for release. The deliverable presents vertical applications and services that are based on a common horizontal layer to allow integrity and effective interplay among different sectors of smart cities.Several events were organized in conjunction with ITU-D Study Group 2 (Question 2/2 *Telecommunications/ICTs for eHealth*). A [workshop on new communication technologies for e-health and socio-economic issues](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q2-2-oct19.aspx) held in October 2019 explored examples of new technologies for e-health and discussed challenges for large-scale adoption and the means to address them. A [webinar on new e-health solutions to combat pandemics with ICT](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q2-2-july06.aspx) held in July 2020 explored use cases for new digital health solutions and the factors and recommendations that need to be considered for their effective deployment and scaling up, especially during pandemics. The content exchanged and lessons learned during these events was used as input to [the final report of Question 2/2](https://www.itu.int/en/myitu/Publications/2021/10/01/08/03/Telecommunications-and-ICTs-for-eHealth).  |

## 6. Emergency telecommunications: Disaster-resilient ICT infrastructure for reduced loss of lives and damages

### ITU guidelines, publications and reports

The [global guidelines for national emergency telecommunication plans](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2020/NETP-guidelines.pdf) were launched during an online forum that took place in March 2020. The guidelines assist policy-makers and national regulatory authorities to develop a clear, flexible and user-friendly national emergency telecommunication plan with a multi-stakeholder approach. This includes national policies and procedures as well as a governance framework governance to support and enable the continued use of reliable and resilient ICT networks, services and platforms for disaster management.

The [“Emergency Telecommunications Table Top Simulation Guide”](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/Publications/2020/TTX_Guide.pdf), launched in March 2020, was co-developed with the World Food Programme’s Emergency Telecommunications Cluster (ETC), to assist Member States and national stakeholders working on disaster management, to plan, design and conduct table top simulations, which allow stakeholders to test and refine emergency telecommunication plans, policies and procedures, as well as to verify whether networks, redundant communications capacity, personnel, and other telecommunication systems are in place for an emergency response.

In the face of the global COVID-19 crisis, a “[Guide to develop a telecommunications/ ICT contingency plan for a pandemic response”](https://www.itu.int/dms_pub/itu-d/opb/hdb/D-HDB-GUIDELINES.03-2020-PDF-E.pdf) was published. This guide focuses on telecommunications/ICT service delivery and business continuity in the specific context of a pandemic such as COVID-19. It outlines a set of actions that countries can take to prepare for, anticipate, and be ready to respond promptly to this type of emergencies by ensuring network continuity and delivery of services. Telecommunication/ICT infrastructure include fixed, mobile, satellite, terrestrial, Wi-Fi and any other technology enabling broadband and broadcasting services.

A new publication on [“Women, ICT and Emergency Telecommunications: Opportunities and Constrains”](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/events/2020/Women-ICT-ET/Full-report.pdf), jointly developed with the World Food Programme’s ETC, outlines a range of factors that underscore the digital gender divide and the increased vulnerability of women and girls before, during and after disasters. It showcases good practices and examples for utilizing ICTs to advance gender equality in disaster risk management, including through the use of new and emerging technologies, and identifies priority areas for the way forward. This report was launched on in August 2020, at the WSIS High Level Dialogue on “[Women and emergency telecommunications: ensuring gender equality in building disaster resilience](https://www.itu.int/en/ITU-D/bdt-director/Pages/News.aspx?ItemID=228)”. To follow up on the improvements made on advancing gender equality in disaster management, ITU organized an online webinar on [“Promoting gender equality for the use of ICTs in disaster management"](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Promoting-gender-equality-for-the-use-of-ICTs-in-Disaster-Management-.aspx), which took place on 8 March 2021. This event presented real experiences on how women have been using technologies to fight COVID-19 and on how they have been able to contribute to disaster resilience in their communities. It also discussed how to continue enabling more women to have inclusive access to, and use of ICTs for saving lives and how governments, international and national humanitarian organizations, and ICT private sector entities had incorporated a larger focus on gender and women in policy frameworks and the allocation of resources in the context of ICTs for disaster management.

A report on “[***Disruptive technologies and their use in disaster risk reduction and management***](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2019/GET_2019/Disruptive-Technologies.pdf)*"* was published during the Global Forum on Emergency Telecommunications (GET 2019), which took place in March 2019 in Balaclava, Mauritius. Developments in disruptive technologies – such as artificial intelligence (AI), the Internet of Things (IoT) and big data – and innovations in such areas as robotics and drone technology are transforming many fields and are enhancing disaster resilience and management as well as risk reduction. The report responded to requests from ITU Member States to identify relevant technologies and facilitate the sharing of best practice.

**Multi-hazard early warning systems and platforms**

A multi-hazard early warning system (MHEWS) has the ability to address several hazards and/or impacts of similar or different type in situations where hazardous events may occur alone, simultaneously, cascading or cumulatively over time, and taking into account the potential interrelated effects. ITU promotes the use and development of MHEWS through awareness raising, country projects, and trainings.

In 2018, ITU built disaster preparedness by implementing a number of early warning systems in [Zambia](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/EWS_ZAMBIA.aspx), where ITU and the Zambia Information and Communications Technology Authority (ZICTA) entered into a Cooperation Agreement to co-finance a Project to allow the establishment of two Early Warning Systems (EWS) in two communities, Mbeta Island and Kasaya Village. These EWS disseminate alerts on flooding and impending disasters to these communities living close to the main river. The systems are used for public safety and facilitate exchange of information between local communities and government agencies.

As part of it work on MHEWS, ITU continues to promote the use of the Common Alerting Protocol (CAP), which has been adopted as [ITU-T Recommendation X.1303](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2020/T-REC-X.1303bis-201403-.pdf). It is a simple but general format for exchanging all-hazard emergency alerts and public warnings over all kinds of ICT networks, allowing a consistent warning message to be disseminated simultaneously over many different warning systems, thus increasing warning effectiveness while simplifying the warning task. Thus, CAP enables authorities to deliver early warnings and alerts to all people and communities at risk, and up to global scale through the use of different technologies.

Between 2018 and 2021, ITU has provided training on CAP to several countries and regions including the Arab States, during regional workshops that took place in [2019](https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/Events/2019/ICT4DRR/DRR.aspx) and [2020](https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/Events/2020/CAP/CAP.aspx). ITU also hosted the online [2020 Common Alerting Protocol (CAP) Implementation Workshop](https://www.preparecenter.org/activities/common-alerting-protocol-workshop-2020), which took place from 29 to 30 September 2020.

The ITU Arab Regional Office, in collaboration with the Telecommunications Regulatory Authority (TRA) of the Sultanate of Oman organized a training workshop on the Common Alerting Protocol (CAP) that took place in July 2021. The workshop highlighted the benefits of using the Common Alerting Protocol (CAP) to enable national authorities to deliver early warnings and alerts to all people and communities at risk in a timely manner. The workshop was attended by over 110 participants from Oman’s ICTs sectors, national disaster committee, national NGOs, meteorological organizations, public and private sector involved in disaster management in Oman, including academia.

To further strengthen the Multi-Hazard Early Warning Systems, in 2020,  ITU partnered with UNDRR, WMO, IOC-UNESCO and the World Broadcasting Unions, to develop a project called “Media Saves Lives” aimed at reinforcing the role and capacity of broadcast media organizations in the early warning chain so they can deliver accurate and timely early warning messages before and during disasters. This is done through trainings to broadcasters from TV and radio stations. So far, 675 media professionals in 30 countries across 4 continents (Africa, Asia, Caribbean, Pacific) and 46 TV and radio organizations have been trained on how to deliver trustful information and early warnings to people who are at risk.

In April 2021, ITU, in partnership with the International Federation of Red Cross and Red Crescent Societies and the World Meteorological Organization, launched a [Call to Action on Emergency Alerting,](https://preparecenter.org/site/ifrcalerthubinitiative/call-to-action-on-emergency-alerting/) during an event that took place on 29 April 2021, held during the Humanitarian Partnership Weeks 2021. This call to action invites all partners to support countries in implementing and benefitting from the Common Alerting Protocol (CAP).

As a follow up activity to the Call to Action on Emergency Alerting, ITU along with the International Federation of Red Cross and Red Crescent Societies (IFCR), is supporting the World Meteorological Organization (WMO) to establish a CAP HelpDesk, which aims at supporting country level implementation of CAP through information, methods, and tools to promote coordination and build a community of support to scale CAP implementation worldwide. The CAP HelpDesk will serve as an important contribution to WMO's ongoing Global Multi-hazard Alert System (GMAS) development, which ITU is also part of. The first workshop on the HelpDesk took place on 30 Sept. 2021

### National Emergency Telecommunication Plans (NETPs)

Since 2018, and based on the [global guidelines for national emergency telecommunication plans](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2020/NETP-guidelines.pdf), NETPs have been delivered for the Dominican Republic, Guatemala, Bolivia, Vanuatu, Samoa, Papua New Guinea, Saint Lucia, Ecuador and Perú. ITU continues to provide assistance to the following countries to develop their NETPs: Afghanistan, Somalia, Sudan, Solomon Islands, Dominica, Grenada and Fiji . Several national online meetings took place to ensure that the plans are developed following the ITU guidelines and through a multi-stakeholder approach involving different organizations working on disaster management, such as the national disaster management authorities, meteorological and hydrological organizations, humanitarian entities, ICT government and private sector, academia, media, civil society, and customs authorities.

To track ITU’s Strategic Goals Target 3.5 (“By 2023, all countries should have a National Emergency Telecommunication Plan as part of their national and local disaster risk reduction strategies”) and to support countries in developing NETPs, ITU started to undertake several regional baseline assessments to identify the availability of national laws, regulations and policies governing emergency telecommunications. These assessments will also help assess the levels of maturity and preparedness for each country in terms its resilience of the telecommunication sector and the way ITU can support the countries’ disaster risk reduction and management efforts. In 2021, three regional assessments are taking place in the Arab States, Pacific Islands and the Americas, including the Caribbean Islands.

**ITU disaster response support**

Since 2018, ITU has provided support to [several countries](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Response.aspx) affected by natural hazards, including, the Bahamas, Mozambique, Papua New Guinea, the Solomon Islands, Tonga, Vanuatu, Zimbabwe, Fiji and Haiti. ITU support includes the deployment of satellite telecommunication equipment and staff, to provide connectivity to help countries restore vital telecommunication links, and to support the importance of emergency telecommunication equipment. During the disasters in Fiji (2020) and Haiti (2021) ITU and the Emergency Telecommunications Cluster (ETC) were able to test the [Disaster Connectivity Map](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Disaster-Connectivity-Maps.aspx#:~:text=%E2%80%8BDisaster%20Connectivity%20Maps%20is,before%20and%20after%20a%20disaster.) (DCM) to assist planning for the response efforts and determine connectivity gaps in the impacted areas. The DCM helped first responders determine the status of telecommunications network infrastructure, coverage, and performance before and after the disaster.

To expand ITU’s work in the area of emergency telecommunications and to support and improve coordination with the satellite and the humanitarian community, ITU joined the [Crisis Connectivity Charter (CCC)](https://news.itu.int/why-itu-is-joining-the-crisis-connectivity-charter-doreen-bogdan-martin/) in 2019, becoming a principal member. The CCC is a mechanism created between the satellite industry and the wider humanitarian community, to make satellite-based communications more readily available for humanitarian efforts and communities impacted in times of disaster. The Charter was developed by the EMEA Satellite Operators Association (ESOA) and the Global VSAT Forum (GVF) and their members, in coordination with the UN Office for the Coordination of Humanitarian Affairs (OCHA) and the World Food Programme (WFP) Emergency Telecommunications Cluster (ETC).

Responding to the increasing demand for support in delivering emergency telecommunication equipment and services when disasters strike, ITU has established an internal emergency telecommunication roster. Dedicated and qualified ITU staff have been selected and trained on the deployment and use of the current (and future) ITU telecommunication equipment and will be able to support the Emergency Telecommunications Cluster work on the ground, by liaising with national authorities and stakeholders on importation and licensing requirements of telecommunication equipment. Due to Covid, none of the roster staff were deployed in 2020 or 2021 but trainings continue.

### Capacity building

ITU continued to build capacity and raise awareness on the importance of disaster management and available ICT tools for disaster risk reduction. Several [events](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Events.aspx) for the use of ICTs for disaster management took place between 2018 and 2021. At a global level, ITU organized the 3rd Global Forum on Emergency Telecommunications ([GET-19](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Events/2019/GET-2019/default.aspx)), which was hosted by the Information and Communication Technologies Authority (ICTA) of Mauritius from 6 to 8 March 2019. The theme of GET-19 was *Innovating together to save lives: using technologies in disaster management*. The Forum attracted around 180 participants from 36 Member States, representing public and private organizations including ministries, regulators, universities and research institutions, humanitarian organizations, development banks, regional disaster management organizations, telecommunication operators, ICT companies, and regional and international organizations.

Key points discussed included the importance of considering potential disaster impacts when planning new ICT infrastructure; the need to increase the levels of ICT access and use; the opportunities of technology and ICTs for disaster management; and the need to build resilient networks and interoperable systems for coordination of response efforts.

GET-19 reaffirmed the need to strengthen coordination and cooperation at all levels, as well as the importance of data, trust and the need for a collective understanding of all phases of disaster management. It reinforced the principle that all actions and programmes must be people-centered: when disaster strikes, it is all about the people. It also highlighted that the preparedness phase is crucial to saving lives.

GET-19 was preceded by the [Common Alerting Protocol Workshop](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Events/2019/GET-2019/CAP-2019-Agenda.aspx), which took place on 5 March 2019.

Regional forums and workshops on the use of ICTs took place in the Americas region (Caribbean) in [2018](https://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/EVENTS/2018/20584.aspx) and 2021, in [Europe and CIS in 2019,](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2019/WO/Using-ICT-to-save-lives.aspx) and in the Arab States Region in [2019](https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/Events/2019/ICT4DRR/DRR.aspx) and in [2020](https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/Events/2020/CAP/CAP.aspx). Several included a table-top simulation exercise. At the national level, Tanzania benefited from a national workshop on the use of ICTs for disaster management in [2019](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Events/2019/Tanzania/Workshop-Role-ICTs-DRR.aspx). In collaboration with the United States Telecommunication Training Institute (USTTI) a joint public webinar on [“Building Disaster Resilience through Emergency Telecommunications”](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Building-Disaster-Resilience-through-Emergency-Telecommunications-in-2020.aspx) was organized and took place on 15 and 16 December 2020. ITU continued to work closely with its partner UN organizations, in particular the World Meteorological Organization (WMO) and the UN Office for Disaster Risk Reduction (UNDRR) and participated in a number of events on the use of ICTs for disaster preparedness and risk reduction.

To continue building capacity on emergency telecommunications, [three new online training modules](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Information-session-and-virtual-launch-online-training-modules.aspx) were launched in January 2021 and are available on the ITU Academy. These modules cover the development of NETPs (based on the ITU Guidelines on NETPs), guidelines on organizing tabletop simulation exercises (based on the guide jointly developed with ETC) and information on the Tampere Convention and its benefits.

During the Emerging Technology for Connectivity week, on 6 July 2021, BDT, along with ITU-TSB’s Focus Group on [AI for Natural Disaster Management (FG-AI4NDM)](https://www.itu.int/en/ITU-D/Conferences/ET/2021/Pages/Programme.aspx) hosted a session on [Emerging Technology for telecommunications in disaster management](https://www.itu.int/en/ITU-D/Conferences/ET/2021/Pages/Programme.aspx), which discussed new applications of emerging technology, or novel use of existing technology, in the context of ICTs for disaster management. The session also introduced the concept of a new repository of case studies and subject matter experts that ITU would like to build to connect relevant stakeholders from industry, the public sector, and academia.

During the World Summit on the Information Society 2021, BDT, along with WMO, organized a session on the [C7 action line on e-environment](https://www.itu.int/net4/wsis/forum/2021/en/Agenda/Session/398), and developed a [High Level Dialogue](https://www.itu.int/net4/wsis/forum/2021/en/Agenda/Session/417) in partnership with UNDRR, WMO and WBU, focusing on a toolkit for news media professionals reporting on disasters and resilience.

**Disaster Connectivity Map (DCM)**

Following a [proposal](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2019/GET_2019/Partnerships-for-Saving-Lives-Disaster-Connectivity-Map-Concept-Note.pdf) presented during the 2019 GET, ITU, together with the WFP Emergency Telecommunications Cluster (ETC), started the development of the [Disaster Connectivity Map](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Disaster-Connectivity-Maps.aspx#:~:text=%E2%80%8BDisaster%20Connectivity%20Maps%20is,before%20and%20after%20a%20disaster.) (DCM) initiative. DCM is a mapping platform to help first responders determine the status of telecommunications network infrastructure, coverage, and performance after a disaster. The information contained in the DCM can be used to support decision-making by first responders from governments and humanitarian organizations about where telecommunication network services need to be restored. The platform is hosted by ITU and supported by GSMA. A first prototype of the map was presented during a [joint ITU/ETC webinar](https://itu.zoom.us/rec/share/flOV1MYUfGGXq6SiDeFXDfuAvPV5gnXjsStpbe4U_vkooKx7J9y6UtVS9uiCobkU.Ic8cp4a7NGcdKMHy).

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| **REGIONAL INITIATIVES**Americas RI1:Disaster risk reduction and management communications* A project for the use of ICTs in emergency and disaster situations in the Caribbean, known as [WINLINK 2000](https://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/ACTVTS/PRJ/AMS-PRJ.aspx), was started to help Antigua and Barbuda, Barbados, Dominica, Grenada, Guyana, Jamaica, and Saint Kitts and Nevis to enhance their emergency telecommunication capabilities and improve emergency and disaster response to help save lives. It consists of an alliance between emergency response agencies, telecommunication authorities, and amateur radio associations to install Winlink servers in the beneficiary countries. The project started in 2018 and its first stage was finalized in 2019, benefiting the Dominican Republic, Costa Rica, Guatemala, El Salvador, Honduras, Nicaragua, and Panama. The Winlink network has been used during every emergency since its implementation;
* Linked to the deployment of emergency telecommunication equipment to the Bahamas after hurricane Dorian struck the country in September 2019, ITU collaborated with the Utilities Regulation and Competition Authority (URCA) and other stakeholders to provide Internet and other connectivity services to some residents in the affected areas;
* In September 2017, ITU deployed emergency telecommunication equipment to Dominica as a response effort after the massive devastation caused by Category 5 Hurricane Maria. The deployment continued through to February 2018.
* During 2020, ITU, in collaboration with the Telecommunications Authority of Trinidad and Tobago (TATT) and the Caribbean Telecommunications Union (CTU) developed a Project Proposal and Cooperation Agreement for Caribbean SMART Seas Toolkit (SST) for Disaster Resilience. The documents were finalized in the first quarter of 2021. The project sets out to preserve the lives of highly vulnerable small-scale fishers in the Caribbean through improved emergency communications at sea.
* The Virtual Vision App, a real time communications platform for disaster management was developed. It helps facilitate direct, real-time communication before, during and after an emergency or disaster. The app was tested in the Bahamas in early December 2019;
* A Multi-stakeholder Forum on the Role of Telecommunication/ICTs for Disaster Management and Risk Reduction for the Caribbean Islands was hosted by Dominica in December 2018. The Forum was aimed at paving the way for enhancing the use of ICTs for disaster management in the region and addressing key questions related to the best use of ICTs for disaster risk reduction and management. Five countries (Antigua and Barbuda, Barbados, Guyana, and Jamaica) benefited from WFP fellowships negotiated by ITU to attend, participate and present country profiles at the forum.
* An online multi-stakeholder consultation on the development of a National Emergency Telecommunications Plan (NETP) for Saint Lucia, was organized in June 2021, in cooperation with the Ministry of Housing, Urban Renewal and Telecommunications of Saint Lucia. A NETP for Saint Lucia was developed in 2020.
* ITU Americas held an Online Workshop on the Role of Telecommunications/ICTs for Disaster Risk Reduction and Management for the Americas, which took place from 14 to 16 September 2021. The meeting involved presentations and discussions on how ICT solutions and digital technologies can be used for disaster management and risk reduction. Around 60 participants attended the event.
* ITU deployed emergency telecommunication equipment to Haiti as a response effort after the devastation caused by the August 2021 earthquake and Tropical Depression (TD) Grace.

Arab States RI1: Environment, climate change and emergency telecommunications* A series of training courses and workshops were held on disaster risk reduction and management and in the use of modern technologies for monitoring and early warning in the Arab States region.
* In July 2021, ITU, in collaboration with Telecommunications regulatory Authority of the Sultanate of Oman organized a Common Alerting Protocol (CAP) implementation workshop.
* In March 2021, ITU and the Arab Red Crescent and Red Cross Organization (ARCO), signed a Framework Cooperation Agreement to join efforts to mobilize resources to enhance connectivity and interconnect the emergency centres of national societies and authorities in all Arab countries.

Asia-Pacific RI5: Contributing to a secure and resilient environment* A joint project with DoCA supported Papua New Guinea, Samoa, Solomon Islands, and Vanuatu to strengthen national emergency telecommunication planning and build capacity. National emergency telecommunication plans were developed for these Pacific Islands in consultation with the Emergency Telecommunications Cluster (ETC);
* Broadband Global Area Network (BGAN) terminals were dispatched to the Solomon Islands in response to the Rennell Island oil spillage;
* Solomon Islands and Vanuatu improved their emergency telecommunication response capacity, which was found effective in response to oil spillage ([Rennel Islands](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Response.aspx)) and Category 5 cyclone ([Harold](https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/Response.aspx)) respectively;
* The Pacific Satellite Connectivity and Development of Emergency Telecom project (2014-2020) supported nine countries in the Asia-Pacific region (Federated States of Micronesia, Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu) with satellite connectivity. The project, signed in 2014, was delivered with partners ITSO, Intelsat, Inmarsat and Kacific. These connectivity capacities have enabled e-applications in schools, communities and health care, while serving as the key point of contact when Cyclone Harold struck Vanuatu. An impact assessment study has been undertaken on the project impact, which has validated the demand for such services and the importance of satellite connectivity in remote areas and of digital infrastructure for resilience and delivering e-applications in the Pacific.
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| **STUDY GROUPS**Between 2018 and 2020, three events were organized jointly with the Study Group 2 Question 5/2: Utilizing telecommunications/information and communication technologies for disaster risk reduction and management. The first event, held in 2018, focused on [*Technological evolution, ICT exercises and disaster management drills*](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q5-2-oct18.aspx)and sharedexperiences and knowledge on effective disaster drills, use of emergency telecommunication systems, and other means to improve preparedness and resiliency, including the availability and usage of emerging technologies. The second event held in 2019, on [*Conducting National Level Emergency Communications Drills and Exercises: Guidelines for Small Island Developing States (SIDS) and Least Developed Countries (LDCs)*](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q5-2-oct19.aspx), highlighted the importance of undertaking emergency telecommunication drills at a national level to test and refine readiness to respond in a timely manner when disasters strike. The third workshop on [*The Enabling Policy Environment for Effective Disaster Management including for COVID-19 Response*](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q5-2-july14.aspx)*,* held virtually, focused on the importance of preparing and implementing National Emergency Telecommunication Plans (NETPs), as well as specific contingency plans to address specific hazards, such as pandemics. It also provided examples of policies that enable flexibility when deploying emergency telecommunication equipment for a successful disaster response. An annual deliverable on “[Draft guidelines for conducting national level emergency communications drills and exercises](https://www.itu.int/oth/D0723000005/en)” was released.  |

## 7. Environment: Creating a circular economy for electronics

**Better data on Waste from Electrical and Electronic Equipment (WEEE, or e-waste) and better e-waste policies**

The Global E-waste Statistics Partnership (GESP), founded in 2017 by ITU, the United Nations University (UNU) and the International Solid Waste Association (ISWA) released [The Global E-waste Monitor 2020](https://www.itu.int/en/ITU-D/Environment/Documents/Toolbox/GEM_2020_def.pdf) in July 2020. All Monitors are available on the GESP website, a free and publicly available online portal at [globalewaste.org](https://globalewaste.org/), which contains WEEE (or e-waste) data and statistics for almost all countries and regions. Over 150 publications relating to WEEE, published by United Nations partners, are also readily available via the portal. The portal will soon host an e-waste statistics e-learning course for National Statistics Offices.

In 2020, a regional e-waste data training was delivered in the Russian Federation to the CIS region plus Georgia, Turkmenistan, and Ukraine; in 2019 in Tunisia to the Arab States region and in Uganda to the Africa region. Training was also delivered at the national level in 2018 in Tanzania, Jordan and Brazil

A Regional E-waste Monitor is being finalised under the GESP in the following regions: Americas, Arab States and Commonwealth of Independent States. These will all be released before the end of 2021.

In September 2021, a new project was signed with the UN Environment Programme (UNEP), which will see the preparation of a Regional E-waste Monitor for the Western Balkans.

Another [new project was signed with the UN Institute for Training and Research (UNITAR) - in collaboration with EACO](https://www.itu.int/en/ITU-D/Environment/Pages/Harmonizing-regional-data-collection-in-East-Africa.aspx), to support countries in East Africa to harmonize the collection of e-waste data.

A regional WEEE statistical training was delivered in the Russian Federation to the CIS region plus Georgia, Turkmenistan, and Ukraine; in Tunisia to the Arab States region; and in Uganda to the Africa region in collaboration with the East African Communications Organization (EACO). A training was also delivered at the national level in Tanzania, Jordan and Brazil.

**Stronger e-waste policies and regulation for managing e-waste**

Since 2019, ITU has been providing [technical assistance](https://www.youtube.com/watch?v=bienIHFkock) in the mapping of stakeholders, and with stakeholder consultations and the drafting of a national policy on the management of e-waste in Namibia. In collaboration with the Ministry of ICT, several stakeholder consultations have taken place in-person and online, and the online consultations have evolved successfully during 2020 despite the Coronavirus pandemic. Over 15 ministries and over 10 regional councils, recyclers, importers and regional producers have been consulted in the policy development process, as part of a public participatory approach. A [video has been produced](https://www.youtube.com/watch?v=3Oj-jthAPAU) covering the assistance in Namibia.

Since the beginning of 2020, ITU has been assisting Malawi, through the Malawi Communications Regulatory Authority and the Environmental Affairs Department, in the development of a national policy on the management of e-waste. In October 2020, 17 ministries and departments and 4 local authorities were consulted online. In 2021, ITU is providing technical assistance in the development of a national e-waste management policy in Burundi whilst also preparing its support for policy development in Bahrain and in Mauritania. At the same time, ITU is providing technical assistance to Dominican Republic in the preparation of a national e-waste management regulation.

In 2020, ITU signed a project with the World Economic Forum (WEF) to prepare a toolkit for developing countries and emerging markets – with a focus on the Africa region – covering the building blocks required for the establishment of a fair and equitable, well-communicated and sustainably financed system of extended producer responsibility (EPR) for the management of WEEE. The toolkit report, titled [*Policy Practices for E-waste Management*](https://www.itu.int/en/ITU-D/Environment/Documents/Publications/2021/Toolkit_Africa_final.pdf?csf=1&e=OHEtlM)*,* was launched in April 2021and an information session followed the launch in early June 2021.

A tailored e-learning module was developed to allow ITU to provide technical assistance in the development of e-waste policy. Launched in March 2021, the e-learning module provides key concepts of e-waste management, EPR policy development, information about stakeholder roles and responsibilities, and suggested definitions. The e-learning is available in French and Spanish, and is in the process of being translated into Arabic.

A new global project was signed in mid-September 2021 between UNEP and ITU on implementing the EPR concept in policies and regulations for the sound management of e-waste. The project will cover countries currently being supported by ITU in order to expand activities, whilst it will also engage new countries. The countries covered by the project are: Botswana, The Gambia, Uzbekistan, Rwanda, Namibia and Dominican Republic.

**E-waste technology support**

In 2019 and 2020, ITU collaborated with the WEEE Forum in the preparation of [International E-waste Day](https://weee-forum.org/iewd-about/) (IEWD), which takes place annually on 14 October. The [2020 addition](https://www.youtube.com/watch?v=AFqP6IEhf5Y) focused on the role of youth in the management of e-waste. As part of the IEWD 2020 celebrations, ITU collaborated with the WEEE Forum in the publication of a thought paper on [Internet Waste](https://www.itu.int/en/ITU-D/Environment/Documents/Publications/2020/Internet-Waste%202020.pdf?csf=1&e=iQq5Zi). Following the publication, a [webinar](https://www.itu.int/en/ITU-D/Environment/Pages/Events/Internet-Waste-Dialogue.aspx) was held with several IT and electronics companies, service providers and recyclers. The thought paper on Internet Waste focuses on WEEE derived from wireless infrastructure for mobile Internet connectivity, connected devices and data storage with examples from mobile networks, IoT and data centres. The aim of this paper is to raise awareness about waste from infrastructure that supports connectivity and the need for sustainable WEEE management practices within data centre and telecommunication industries considering forecasted growth. For the 2021 edition of International E-waste Day (October 14th), ITU, together with the WEEE Forum, GSMA and Sofies Group, are preparing a thought paper titled [*Digitalization for a Circular Electronics Value Chain*](https://www.itu.int/en/ITU-D/Environment/Pages/Priority-Areas/Developing-Technology-Solutions.aspx). A webinar will also be held at the end of October on this topic.

**E-waste Coalition**

The [E-waste Coalition](https://www.itu.int/en/ITU-D/Environment/Pages/Priority-Areas/UN-E-waste-Coalition.aspx) is a UN system-wide group of agencies and programmes with a common vision to tackle the global WEEE challenge. ITU was fundamental in the bringing together of these entities, eventually to form the Coalition . Several events were organized by the UN E-waste Coalition, including two WSIS Forum high-level dialogues, [one event in 2018](https://www.itu.int/en/ITU-D/Climate-Change/Pages/Building-an-E-waste-Coalition.aspx) where UN agencies signed a Letter of Intent, and [one in 2019 which saw three new UN agencies join the Coalition](https://www.itu.int/en/ITU-D/Climate-Change/Pages/Events/2019/Building-the-E-waste-Coalition.aspx). Both events focused on building the UN E-waste Coalition. The Coalition also organized a side event at the fourteenth meeting of the conference of the parties to the Basel, Rotterdam, and Stockholm Conventions. The side event focused on shifting [towards sustainable and responsible reverse supply chains in a circular economy for electronics](https://www.itu.int/en/ITU-D/Climate-Change/Pages/Events/2019/Sustainable-and-Responsible-Reverse-Supply-Chains.aspx). ITU temporarily hosted the Coalition secretariat between November 2020 and May 2021. Those temporary duties now lie with UNEP.

**Circular Electronics Partnership**

ITU contributed to the [Roadmap and Vision for the Circular Electronics Partnership](http://cep2030.org/). (CEP), which includes the World Business Council for Sustainable Development (WBCSD), WEF, the Responsible Business Alliance, the Green Electronics Council, the Platform for Accelerating the Circular Economy, and the Global Enabling Sustainability Initiative. The CEP aims to shift the playing field of the electronics industry towards contributing to the SDGs through circular economy principles.

Based on the Roadmap, ITU also co-published the report on A [New Circular Vision for Electronics](https://www.itu.int/en/ITU-D/Climate-Change/Pages/ewaste/A-New-Circular-Vision-for-Electronics-Time-for-a-Global-Reboot.aspx), launched during the annual meeting of the 2019 World Economic Forum, Davos, Switzerland. ITU is currently discussing with the WBCSD with regards to its continued participation, potentially as a formal partner, in the CEP.

**Climate Change**

In July 2021, ITU established a memorandum of understanding with UNEP DTU Partnership to cooperate and maintain close working relation on sustainable digital transformation. This includes development and participation in joint research on sustainable digital transformation, and development and participation in outreaching and knowledge sharing workshops, events, and conferences.

Since March 2021, ITU has been working with a group of Master’s students from the Graduate Institute of International and Development Studies, Geneva on a capstone research project on ‘ICTs for Climate Change Action’. The project aims to understand how emerging digital technologies can be leveraged to mitigate the negative impact of climate change in the agricultural and energy sectors in Sub Saharan Africa, with a specific focus on the Internet of Things (IoT).

Since February 2021, the Environment thematic priority has been working with the ITU Academy to review and update the ICT and Climate Change Training Programme, which includes six foundational online modules and 15 elective modules related to climate change and the circular economy.

Partnering in UN climate change related initiatives:

* Since April 2021, ITU has been actively participating in the Coalition for Digital Environmental Sustainability (CODES) initiative as part of the follow-up to the SG’s Roadmap on Digital Cooperation. ITU is also part of the writing group for the report on ‘A Digital Planet for Sustainability – Working towards an Acceleration Plan for Digital Environmental Sustainability’.
* As of August 2021, ITU became a partner in the UN-wide partnership initiative, [UN4NAPs](https://unfccc.int/UN4NAPs), to scale up technical support to Least Developed Countries and Small Island Developing States to formulate and implement National Adaptation Plans (NAPs). BDT will support requests from Members States, especially related to using frontier technologies for adaptation assessments, planning & implementation; and accessing information/experience of other countries in applying adaptation technologies.
* Since May 2021, ITU has been participating in the Climate Change Adaption Communities of Practice (CoPs) as part of the [Digital Public Goods Alliance](https://digitalpublicgoods.net/what-we-do/) (DPGA). The CoP is focusing on open data for Climate & Weather Services for food security, agriculture and disaster risk reduction and is led by UNICEF and the Norwegian Ministry of Foreign Affairs. BDT is working with the DPGA Secretariat and WMO to draft a call to action around weather and climate information data sets being made openly and freely available as digital public goods.

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| **REGIONAL INITIATIVES**Americas RI1: Disaster risk reduction and management communications* As part of the Girls in ICT Day 2019 celebrations in the Caribbean, awareness on the negative impact of climate change was enhanced through the planting of trees in many schools, in collaboration with local regulators, ministries of education, and Non Governmental Organisations (NGOs);
* BDT implemented the e-waste Pilot Plant Project that was jointly developed with the University of La Plata in Argentina. The [project](https://www.itu.int/en/ITU-D/Climate-Change/Pages/ewaste/E-waste-pilot-plant.aspx) was successfully implemented in 2018;
* During 2021, ITU has been working with the Dominican Republic to strengthen its regulatory framework for e-waste.

Arab States RI1: Environment, climate change, and emergency telecommunications* Bahrain and Mauritania are receiving support in the development of a national WEEE management policy;
* The Arab States region is finalizing the Regional E-waste Monitor, which will collect and improve WEEE statistics in the region. The Monitor will improve data availability and quality, availability of policies and regulations and awareness through capacity building workshops. It will also communicate the data on WEEE to policy-makers, the media, and other relevant stakeholders;
* A [regional event was organized online jointly by ITU, UNU and UNEP](https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Pages/Events/2020/WEEE/WEEE.aspx), in December 2020. The workshop focused on WEEE and the move towards regional harmonization of national e-waste policies, regulation and standards in the Arab States region.

Asia-Pacific RI5: Contributing to a secure and resilient environment* The [policy awareness workshop on e-waste](https://www.itu.int/en/ITU-D/Climate-Change/Pages/Events/2019/Workshop-on-E-waste-India.aspx), which took place in 2019 in Hyderabad, India, was co-organized with key agencies of the India Government and the UNU, ILO, WHO, and UNEP. The workshop raised awareness, built capacity, and provided recommendations for future work on WEEE in India, including the preparation of a Pan-India E-waste Monitor. In January 2021, ITU, UNEP and UNU organized a follow-up information session.

Africa RI1: Building digital economies and fostering innovation* Namibia and Malawi are currently receiving policy support in the development of national WEEE management policies, whilst Namibia, Malawi and Botswana are receiving nationally focused assistance in the collection and improvement of WEEE data and statistics. ITU, UNITAR and EACO, signed a new project in 2021, to provide support on WEEE data and statistics.

CIS RI4: Monitoring the ecological status and the presence and rational use of natural resources* ITU supports the ongoing “Regional E-waste Monitor CIS plus Georgia, Turkmenistan and Ukraine" project, implemented by the Sustainable Cycles (SCYCLE) Programme jointly with the United Nations University (UNU) and the United Nations Institute for Training and Research (UNITAR), in partnership with the United Nations Environment Programme (UNEP); a regional meeting was held in Russia in January 2020, and an online webinar on e-waste legislation, management and statistics took place in November 2020, to track progress on the project activities;
* ITU is helping Kyrgyzstan to develop a spatial data infrastructure (SDI), a common platform that stores and provides data related to the monitoring and mapping of climate and water resources. This will help support policy and regulatory decision-making across Central Asia. The SDI hosts data through a combination of remote sensing, geospatial analysis, in-site measurement and regional reporting. The SDI enhances sharing of spatial data among government departments and organizations and facilitates better access to information across the region for discovery, viewing and download. In 2020 ITU completed the first phase of the SDI development, when the SDI was deployed, populated with initial data and used by the State Water Resources Agency of the Kyrgyz Republic. In 2021 ITU continued to work with Kyrgyzstan to further digitize and populate the SDI with data from the Issyk-Kul region.
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| **STUDY GROUPS**Three events were held in conjunction with ITU-D Study Group 2 Question 6/2 (*ICTs and the environment*). A session on [e-waste policies, strategies and frameworks](https://www.itu.int/en/ITU-D/Climate-Change/Pages/Events/2018/session-Q6-2-oct18.aspx) was held in October 2018. A workshop on frontier ICTs for climate [action](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q6-2-oct19.aspx) held in October 2019 brought together actors from the sectors involved in the development of frontier ICTs such as big data and earth observation in the context of climate action. A [webinar on ICTs for climate action and rebuilding greener economies after COVID-19](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q6-2-july15.aspx) held in July 2020 explores the lessons learned from COVID-19 and how ICTs help rebuild economies in an environmentally responsible manner after COVID-19. The content exchanged and lessons learned during the workshop was used as input to the [final report of Question 6/2.](https://www.itu.int/en/myitu/Publications/2021/10/01/08/28/Information-and-communication-technologies-and-the-environment)  |

## 8. Networks and digital infrastructure: Making reliable connectivity available to everyone

## ITU broadband maps

Identifying ICT infrastructure availability and gaps to connect people: the ITU [broadband maps](https://itu.int/map-public) data research and validation were enhanced to promote understanding and investment opportunities of network infrastructure to take stock of worldwide connectivity. The ITU data managed on global transmission networks provides unique information from more than 540 operators and 16 million high-speed information highways (backbones). Through the overlaying of multiple ICT infrastructure data and specific industry data (e.g. schools, FinTech, health centres, etc.) the broadband map of ICT infrastructure is providing continued support to key ITU activities and projects focusing on the reliable connectivity to all BDT impact pathways. Examples are the [Giga](https://www.itu.int/en/ITU-D/Initiatives/GIGA/Pages/default.aspx) school mapping exercise, which uses both school location data and infrastructure data, and [Financial Inclusion](https://www.itu.int/en/myitu/News/2020/10/06/07/37/Mapping-financial-inclusion-Mexico-FIGI) mapping for the FIGI initiative.

Business planning for infrastructure deployment toolkit: In order to achieve universal access, once infrastructure and gaps are identified, policy-makers need to plan the financial sustainability of new networks deployment. For this, the 2019 [ICT infrastructure business planning toolkit](https://news.itu.int/itu-publishes-new-ict-infrastructure-business-planning-toolkit/) offers regulators and policy-makers a clear and practical methodology to deliver accurate economic evaluation of proposed broadband infrastructure installation and deployment plans. It serves as a practical manual for regulators and policy-makers working towards extending broadband network deployment and access, addresses key elements for a successful business planning implementation for ICT infrastructure development, and presents and explains best practice on infrastructure installation and deployment plans as well as its economic feasibility assessment to support decision making. It provides quantitative examples of the most searched projects, such as the construction of fibre-optic backbones, wireless broadband networks (including 4G), and fibre-to-the-home (FTTH) access network projects.

In November 2020, the first “ITU Training on Business Planning for ICT Infrastructure development” was held virtually through the ITU Academy Portal, with real life business plans being developed by participants. In 2021, two training events for Africa and Europe were organized, with further information available [here](https://itu.int/go/maps).

### Last mile connectivity project

The last mile connectivity [project](https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2019/Workshop%20Kyiv/Aminata%20Garba%203%20Last%20Mile%20Connectivity%20Kiev.pdf) was launched to drive new collaborative strategies to ensure that all people achieve meaningful universal connectivity. It consists of guidelines and additional resources to help Member States address last-mile connectivity challenges, including a database of case studies on last-mile connectivity and interactive last-mile connectivity diagnostic and decision-making tools. It will also offer capacity-building services and assistance on implementation, helping Member States to plan, design and implement last-mile connectivity solutions, including identifying unconnected areas and providing expert guidance on the selection of sustainable technical, financial and regulatory solutions. This project is expected to enable partners to share resources and take a more holistic approach that treats broadband as a basic public utility and tool for socio-economic development.

In 2020, the Last Mile Connectivity Solutions Guide was launched and is available [here](https://www.itu.int/en/publications/ITU-D/Pages/publications.aspx?parent=D-TND-01-2020&media=paper).

**Emerging Technology Trends**

The BDT Emerging Technology Trends comprises a yearly thematic publication on emerging technology, a forum on emerging technology, an innovation challenge on emerging technology and capacity building. The emerging technology trends is planned to take place annually with a new theme each year focusing on specific emerging technologies and targeting several SDGs.

The objective of the Emerging Technology Trends is to promote the wide scale deployment of emerging technologies, including Artificial Intelligence, IoT, Big Data, low orbiting satellites, and 5G to contribute to the achievement of the Sustainable Development Goals. Moreover, through sharing of experiences and solutions and by engaging a diverse range of international, regional and national stakeholders, it aims to build partnerships, enhance the engagement stakeholders, and expand the impact of ongoing regional initiatives that promote emerging technologies for development.

In 2020, the [first edition of the Emerging Technology Trends](https://www.itu.int/en/myitu/Publications/2021/05/04/12/23/Emerging-technology-trends-Artificial-intelligence-big-data-for-development-4) was created and focused on Artificial Intelligence and Big Data for Development.

[ITU's Emerging Technology for Connectivity 2021](https://www.itu.int/en/ITU-D/Conferences/ET/2021/Pages/default.aspx) was held in July, with about 25 sessions and 595 participants. It featured about 154 speakers. In addition, capacity development activities were conducted with 5 training courses. The presentations, recordings and reports are available on the [website](https://www.itu.int/en/ITU-D/Conferences/ET/2021/Pages/Programme.aspx).

### ITU-MUST project on IPv6 and IoT Expertise Centre

The main goal of the project ITU-MUST (Malaysia University of Science and Technology) is to assist Member States on the smooth transition from IPv4 (Internet Protocol version 4) to IPv6 (Internet Protocol version 6) for Internet of Things (IoT) infrastructure, IPv6 over 5G networks, IPv6 for Industry 4.0, deployments of services and applications, raising awareness through conducting technical assistance, trainings and/or workshops. Several training courses and workshops were organized in 2019 to this effect, and continued in 2020 online, in English and in Arabic. More than 150 young professionals were certified in the obove- mentioned IT domains.

### Broadband for rural connectivity

In order to address the power supply challenges for rural communication, ITU is developing a guide on sustainable and innovative power solutions for broadband connectivity that will be also used for the Giga project to connect schools. In addition, this guide will be used for smart green communities as part of the key solutions to connect rural areas to broadband networks.

The ITU/McCaw Foundation project for the Africa region has been implemented and is under closure process. The key achievements are:

* In Burundi, 437 institutions were connected to broadband Internet including universities, schools, hospitals, government agencies, and cooperatives;
* In Burkina Faso, schools and public administration services in ten cities were covered by broadband networks. Fourteen schools were equipped with computer networks, equipment, and Internet connection to allow the introduction of e-education in the education system;
* In Djibouti, 116 Institutions were connected to broadband Internet using 4G broadband network infrastructure. This included 48 schools, 45 hospitals/clinics and 23 government institutions/ministries;
* In Rwanda, more than 50 public schools and 40 health centres were connected to broadband Internet;
* In Eswatini, project implementation is in its final stage to install a 4G LTE broadband wireless network to cover 20 rural areas.

### Policy and Regulation Initiative for Digital Africa (PRIDA)

This policy and regulation initiative for the Africa region was launched to foster universally accessible and affordable wireless broadband across the Africa region in order to unlock future benefits of Internet-based services. This ambitious 3.5-year initiative is a [multi-partner project](https://www.youtube.com/watch?v=6NYLHZqeEvo) by the European Union, the African Union, and ITU. Key achievements so far include:

* Eight capacity building workshops, where 573 engineers were trained from 48 regulatory authorities;
* Publication of the technical report: “Analysis of the current legislative and regulatory framework and the usage of spectrum as of today as well as in the foreseeable future”;
* Publication of the technical reports “Guidelines on radio-frequency regulation based on ITU Radio Regulations, ITU-R Recommendations, Reports and Handbooks, regional harmonization frameworks, case studies, country experiences and regional consultations” and “Spectrum Management Guidelines for the Introduction of IMT in Africa”, “Report on the assessment of the current cross-border coordination agreements in Africa”, “Report on the current version of the harmonized calculation method for Africa (HCMA)” and “A Gender Sensitivity Review of the PRIDA Project.”

### Conformity and interoperability of ICT products and networks

ICT products are the proxies to digital economy. Under the Conformance and Interoperability (C&I) Programme umbrella, BDT is leading the implementation of the pillar 3 (capacity building) and 4 (assistance to membership) by providing guidance on frameworks for market entry of ICT devices.

Skills in specific absorption rate, radio frequency, electromagnetic frequency, and digital terrestrial television were enhanced through conformity and interoperability (C&I) training for English-speaking and French-speaking participants from the Africa region.

ITU assisted Mauritania and Djibouti in their process of setting up their C&I regimes and considering the establishment of regional mutual recognition agreement. In addition, capacity built in areas related to type approval and electromagnetic frequency through conformity and interoperability (C&I) training for the Arab region.

The development of a global conformance and interoperability training programme (CITP) is ongoing. The CITP will be the reference on knowledge transfer on C&I and is built upon the successful implementation of the Spectrum Management Training Programme (SMTP).

CITP modules includes: C&I frameworks; establishment of mutual recognition agreements for market entry; and guidance to young IoT developers willing to reach national and global markets with their products.

A white paper on ITU recent activities on C&I and on the future C&I landscape was started in 2020, in coordination with relevant study groups in ITU-R, ITU-T and ITU-D and is expected to be finalized in 2021.

**Spectrum Management: WTDC Resolution 9 (Rev. Buenos Aires, 2017)**

A summary of the ITU activities for implementation of Resolution 9 on spectrum management are listed in the table below and further details are provided in [document INF/3](https://www.itu.int/md/D18-TDAG28-INF-0003/en). The table is sorted by thematic overview of assistance provided and the number of activities carried out. Document in [Document INF/3](https://www.itu.int/md/D18-TDAG28-INF-0003/en) contains a summary of assistance provided to Member States on spectrum management issues by region.

| Topic | Number of activities |
| --- | --- |
| * Assistance in raising the awareness of national policy-makers as to the importance of effective spectrum management for a country's economic and social development.
 | 26 |
| * Training and dissemination of available ITU documentation.
 | 19 |
| * Assistance in developing methodologies for establishing national tables of frequency allocations and spectrum redeployment.
 | 13 |
| * Assistance in setting up computerized frequency management and monitoring systems.
 | 7 |
| * Economic and financial aspects of spectrum management.
 | 10 |
| * Assistance with preparations for world radiocommunication conferences (WRCs) and with follow-up and implementation of WRC decisions.
 | 16 |
| * Assistance with participation in the work of the relevant ITU-R study groups and their working parties.
 | 8 |
| * Transition to digital terrestrial television broadcasting.
 | 1 |
| * Assistance in identifying the most efficient ways to utilize the digital dividend.
 | 9 |
| * Emerging technologies and approaches in using spectrum.
 | 22 |
| * Innovative ways of spectrum licensing.
 | 12 |
| * Assistance with interference caused by devices in derogation of national spectrum allocations.
 | 5 |
| * Assistance in resolving seasonal interference caused by anomalous propagation of radio waves.
 | 1 |
| * SMS4DC development and training.
 | 11 |
|  Total | 160 |

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| **REGIONAL INITIATIVES**Africa RI5: Building digital economies and fostering innovation in Africa* The first [Global Refugee Forum](https://www.itu.int/en/ITU-D/bdt-director/Pages/News.aspx?ItemID=205) was held in Geneva in December 2019. ITU, UNHCR and GSMA co-sponsored a session that explored the challenges of delivering connectivity for refugees, displaced persons, and the communities that host them. The event was the culmination of close collaboration for future programmes and national projects on meaningful connectivity for refugees and their host communities in Africa.

Asia-Pacific RI3: Fostering development of infrastructure to enhance digital connectivity* ITU continues to update the [**ITU interactive terrestrial transmission maps**](https://www.itu.int/itu-d/tnd-map-public/) for the Asia-Pacific region and over 1 million kilometres of network data are in place. The study on [Maximizing availability of international connectivity in the Pacific](https://www.itu.int/pub/D-PREF-BB.GDI_AP-2018) (2018), developed in partnership with Pacific Islands Telecommunications Association (PITA) and with support from DITRDC and assessment and mapping of ICT network connectivity (in Pakistan and Afghanistan) has provided high quality data to update the maps;
* As IMT 2020 (5G) networks get rolled out in Asia and the Pacific region, capacity development is a major area of engagement of the Asia-Pacific Regional Office. More than 530 participants were trained in the area of 5G under the ITU Asia-Pacific CoE;
* Spectrum management remains one of the areas of high demand from ITU Members. The Asia-Pacific Regional Office (RO-ASP) continued its efforts to assist Members demands in this important area including dedicated activities on SMS4DC (in Lao PDR, Afghanistan, Mongolia, Samoa and all Pacific membership) to automate respective national spectrum management; following the ITU assistance, NTFA in Tonga and the IXP policy in Samoa were adopted by the respective governments;
* Recognizing the considerable challenges that administrations and regulators face on emerging ICT issues, RO-ASP conducted studies on radio frequency assignments of IMT identified bands in Asia and the Pacific, co-deployment between ICT and energy infrastructure, impact assessment of satellite connectivity project in the Pacific. It also partnered with ADB on digital connectivity and LEO satellite constellations to identify opportunities for Asia and the Pacific.
* The ITU assistance led to the formulation of a new regional project for Connect2Recover, funded by Australia and another project on resilient infrastructure, funded by the Government of Japan, with a view to accelerating the COVID recovery efforts.

Americas RI2: Spectrum management and transition to digital broadcasting * A regional spectrum management training seminar for the Caribbean was organized to improve the level and speed of ICT connectivity in countries within the Caribbean;
* In 2019, technical and special assistance was provided to the Ministry of Science, Energy and Technology and the Spectrum Management Authority of Jamaica for the development of a national spectrum licence framework for Jamaica to improve ICT connectivity in the country;
* In 2020, ITU implemented a project to value the 700 MHz and 2.5 GHz frequency bands in Ecuador;
* The ITU Policy and Economics Colloquium (IPEC) was organized annually from 2018 to 2021. In 2020 and 2021 it was organized online, focusing on supporting countries in financial and regulatory matters;
* Assistance was provided in Spectrum Management to Guyana, through its National Frequency Management Unit (NFMU);
* A Spectrum Management Seminar for the Caribbean Islands was held in December 2019;
* ITU implemented a project with the Ministry of Information and Communication Technologies (MinTIC) of Colombia in the development of a number of studies, analysis and proposals related to (i) the diagnosis and updating of National Technical Plans of Radio Broadcasting - PTNRS; (ii) the definition of technological strategy for the new AM and FM broadcasting; (iii) new technologies for broadcasting; (iv) the proposal of a manual of good practices for assembly of radio stations; (v) the technical specification of a web tool for management and control of the PTNRS and the radio broadcasting concessionaires; as well as (vi) training and sharing activities result with the sector;
* ITU implemented a project with MinTIC of Colombia, in the development of a diagnosis and audit of spectrum allocation through an objective selection process;
* ITU implemented a project with MinTIC of Colombia for a strategy design for the implementation of international best practices in the allocation of spectrum attributed to International Mobile telecommunication (IMT) services; ITU also implemented a project to advise and support the MinTIC in the development of general activities for the best use of ICT for Digital Transformation;
* A project to provided technical assistance to validate, plan and execute the allocation of permits for the use of IMT spectrum, and for the use of best practices to increase Internet penetration in Colombia is ongoing (2021);
* A Cooperation Agreement was signed between ITU and the National Spectrum Agency-ANE of Colombia, to join efforts to promote research, knowledge and dissemination of the radioelectric spectrum, as well as to collaborate in the identification, analysis and implementation of trends and best practices for management, planning, administration, surveillance and control of the radioelectric spectrum.
* In 2021, ITU and ANE signed a project for the development of economic and technical studies that allow the ANE to make recommendations to the MINICT for the definition and adoption of the national policy on the digital sound broadcasting services.
* The “5th Annual Latin America Spectrum Management Conference” & a “Workshop on Spectrum and Community Networks” were co-organized with the Global Forum in September 2018. This was attended by 167 registered participants, coming from 16 different countries (12 from Latin America);
* In September 2018, an ITU-ITSO training on satellite communications was held in Quito, Ecuador. The event was attended by 44 delegates from Brazil, Ecuador, and Paraguay. All 44 participants received the corresponding certificate after they successfully passed the exam;
* In April 2019, a second version of the ITU-ITSO training on satellite communications was offered in Asuncion, Paraguay. The event was attended by 48 delegates from Argentina, Paraguay, and Uruguay. All 48 participants received the corresponding certificate after they successfully passed the exam;
* From 2 to 29 November 2020, a third version of the ITU-ITSO training on satellite communications was offered online (due to travel restrictions under the global pandemic). The event was attended by 48 delegates from Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Guatemala, Honduras, Mexico, Nicaragua, United States, Uruguay, and Venezuela. Forty-two (42) out of 48 participants received the corresponding certificate after they successfully passed the exam;
* ITU provided free training in Spanish of the basic modules of the Spectrum Management Training Program (SMTP), in 2019 and 2020 certifying more than 340 professionals in the region, mainly from governments. Demand for SMTP in Spanish remains high and ITU will continue to offer more of these basic modules in 2021;
* From 22 until 26 April 2019 ITU organized the regional training on Satellite Communications in Asuncion, Paraguay. A total of 49 people attended the training, and 48 people took the exam and passed.
* Studies on the impact of 5G in the productive sectors in Chile and Peru were presented to the respective governments in 2020.

CIS RI5: Fostering innovative solutions and partnership for the implementation of Internet of Things technologies and their interaction in telecommunication networks, including 4G, IMT-2020 and next-generation networks, in the interests of sustainable development* ITU created an International Research, Development and Testing Centre for new equipment, technologies, and services in St. Petersburg, Russian Federation (Phase 1 of the joint project with Rostelecom) and works towards connecting other countries in the region and building a distributed virtual C&I lab (Phase 2 of the project);

A series of dedicated regional training courses and events were organized following high demand from membership (on spectrum management, VoLTE, 5G, Future Networks). All events were done in cooperation with ITU-T and ITU-R. In 2021, the regional workshop on 5G (IMT-2020) networks launch and operation experience focused, among other topics, on human exposure to EMF. * In 2019 the third annual CIS region and CEE spectrum management conference and ITU workshop on how to achieve interference-free communication at the current technological stage was held in Minsk, Belarus. In December 2020 and September 2021, the spectrum management regional seminars were held virtually.
* In June 2021, ITU provided targeted assistance to Armenia as part of the Connect2Recover global initiative, conducting a series of trainings on the use of various ITU tools (broadband infrastructure mapping, last mile connectivity) to telecom operators. Currently, ITU is undertaking an infrastructure resilience assessment. Similar trainings on broadband and infrastructure tools use and studies will be organized in Kyrgyzstan in October 2021.

Arab States region: Internet of Things, smart cities and big data* A series of annual forums on IoT and smart cities were organized for Sustainable Development and Digital Transformation in the Arab Region, with a focus on the 5th Generation of Mobile Technologies (5G) and how it will transform the landscape for the wide scale deployment of the Internet of Things, Artificial Intelligence, Big Data and Smart Cities particularly in the Arab Region.
* An Emerging Technologies Week was organized in 2019 and 2020 (in 2020 it was organized for both the Arab and African regions). The week and the related activities promoted the deployment of IoT, Artificial Intelligence and Big Data to establish Smart Cities and Societies in the Arab region, with the aim of contributing to the achievement of the Sustainable Development Goals and Digital Transformation as well as the New Urban Agenda in the Arab Region. In addition, a challenge was organized in 2020 on the topic of AI for Development where 4 outstanding winners from the Arab and African regions were selected.
* A regional ITU IPv6 and IoT Expertise Centre will be launched in November 2021, in collaboration with and support from the Sudan Telecommunications and Post Regulatory Authority (TPRA). The main objective of the center is to assist Member States by supporting a smooth and well managed transition from Internet Protocol version 4 (IPv4) to Internet Protocol version 6 (IPv6) for Internet of Things (IoT) infrastructure, IPv6 for 5G, IPv6 for Industry 4.0, services and applications deployments, raising awareness through conducting theory and practical sessions.

Europe RI1: Broadband infrastructure, broadcasting, and spectrum management* A series of workshops and seminars were organized to discuss the future of television, the mapping of terrestrial broadband infrastructure and services, digital economy, and radiocommunication matters. The Annual Regional Regulatory Forums and GSR regional regulatory roundtables provided additional platforms for European regulators to discuss emerging trends;
* A series of background papers and studies were elaborated focusing on 5G, connectivity, EMF, mapping of broadband infrastructure, investment;
* Regional assessments on the implementation of 5G in non-EU countries as well as EMF were carried out;
* The annual 5G Techritory conferences for the Baltic States was held in Riga, Latvia, and supported by ITU and continue to serve as the sub-regional platform for cooperation;
* Technical assistance in the field of spectrum was provided to Albania and Moldova. In addition, a broadband policy was developed for Albania. Montenegro is being provided assistance in the field of IPv6, reviewing IPv6 preparedness and leading toward the establishment of the IPv6 laboratory;
* A special regional engagement initiative based on formalizing cooperation between ITU and country authorities, was launched to enhance the dataset of the ITU interactive transmission maps;
* A regional initiative project on supporting of investment opportunity mapping systems in broadband infrastructure for south Eastern Europe was developed. A series of meetings were held in order to build capacities of countries. Background documents on mapping systems were developed and are to be further developed into guidelines, now under elaboration and expected for release in Q4 2021.
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| **STUDY GROUPS**Three annual deliverables (papers) from ITU-D study groups were developed and published as follows: [**Trends in new broadcasting technologies, services and applications**](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/OngoingWork.aspx) (Question 2/1, released in July 2019): This paper covers the latest trends in broadcasting, including new service scenarios based on the latest technologies, the work being carried out in ITU-T and the economic and regulatory impacts for end users, stakeholders and regulatory bodies.[Considerations about the cost structure of the digital transition, including new services and applications](https://www.itu.int/oth/D0723000001/en) (Question 2/1, released in May 2020): This paper provides an insight into the evolution of broadcasting services and the significant financial impact of digital transition, with details on cost elements to consider carefully when planning and implementing the steps towards a successful migration to digital broadcasting, and the analogue switch-off.These two papers are further reflected in the [final report of Question 2/1](https://www.itu.int/en/myitu/Publications/2021/07/27/08/38/Strategies---policies---regulations-and-methods-of-migration-and-adoption-of-digital-broadcasting).[**Broadband development and connectivity solutions for rural and remote areas**](https://www.itu.int/oth/D0723000002/en)(Question 5/1, released in May 2020): This paper highlights the major challenges for rural and remote area connectivity, which include inadequate supporting infrastructure, difficult terrain, illiteracy, high cost of installing information and communication technology (ICT) infrastructure and policy issues. It recommends ways in which regulators, policy-makers and operators can address these challenges. Two workshops were held in conjunction with the ITU-D Study Group 1 Rapporteur Group meetings in September 2019. The [workshop on rural connectivity](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q5-1-sept19.aspx) discussed key challenges, in particular the costs of connecting people in rural areas. It was noted that the main barrier to connecting the unconnected is not spectrum or coverage. The [workshop on the implementation of broadband projects](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/session-Q1-1-sept19.aspx) shared success stories and challenges encountered from such projects in all geographical regions. The outcomes of these workshops enriched the [final report of Question 5/1.](https://www.itu.int/en/myitu/Publications/2021/07/22/13/20/Telecommunications-ICTs--for-rural-and-remote-area) A workshop on ICT conformance and interoperability: challenges for developing countries, was organized in conjunction with ITU-D Study Group 2 Question 4/2 on assistance to developing countries for implementing conformance and interoperability (C&I) programmes and combating counterfeit ICT equipment and theft of mobile devices. This event explored and proposed solutions for: ICT products as SDGs enablers, innovative collaboration, and new technologies (especially IoT). The content exchanged and lessons learned during the workshop will be used as input to the final report of Question 4/2. The workshop programme and presentations can be accessed at the following study group link.Question 4/2 features 4 illustrations on the Conformity and Interoperability of the ICT environment: 1-Why C&I?; 2-C&I frameworks; 3-Hyperconnected societies by ICT devices; 4- Combating counterfeit ICT devices. These are available for download [here](https://itu.int/go/ci_development).A [tutorial on AI and emerging technologies](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/tutorial_AI_oct19.aspx) was held at ITU in conjunction with ITU-D study group rapporteur group meetings in 2019 and enabled ITU Member States, Sector Members, and ITU staff to learn more about AI and its opportunities and challenges. Trainers and speakers from academia, the private sector and government agencies shared their insights, while the discussions highlighted some of the questions regarding intellectual property rights, ethics and accountability. A webinar was held in July 2020, on [**broadcasting services for COVID-19 response**](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q2-1-july03.aspx). It focused on ways broadcasters are helping to respond to the COVID-19 global health crisis, contributing social awareness and information as well as addressing new communication needs. The speakers highlighted case studies on the broadcaster role on mitigation of the crisis, and new services and applications that can be leveraged to help populations, including e-learning and emergency response. The last mile connectivity solutions guide was presented at the fourth ITU-D Study Group 1 plenary meeting held on 26th March 2021. The Question 1/1 Co-Rapporteur was one of the contributors to the guide.On 23 April 2021, an ITU workshop on the Future of Television for Asia and Pacific kickstarted the dissemination of findings from the ITU-D Study Group final reports – here specifically for [Question 2/1.](https://www.itu.int/en/myitu/Publications/2021/07/27/08/38/Strategies---policies---regulations-and-methods-of-migration-and-adoption-of-digital-broadcasting)  |

## 9. Policy and regulation: Supporting collaborative policy and regulatory frameworks for digital market development and user well-being

### The Global Symposium for Regulators

The 19th edition of the [Global Symposium for Regulators (GSR-19)](http://www.itu.int/gsr19), held in Port Vila, Vanuatu, from 9 to 12 July 2019, attracted over 325 participants, including government ministers, heads of regulatory authorities, and industry executives from 64 countries. The theme of GSR-19 was *Inclusive connectivity: The future of regulation*. GSR-19 adopted the best practice guidelines on fast-forwarding digital connectivity for all. The guidelines support spreading last-mile networks to allow everyone to participate in the digital economy and benefit from digital transformation.

The [20th edition of GSR](https://www.itu.int/en/ITU-D/Conferences/GSR/2020/Pages/default.aspx) was a fully virtual event, held in September 2020. As GSR celebrated its 20th edition, the global community of ICT regulators celebrated 20 years of evolving regulatory frameworks. The anniversary event focused on providing concrete guidance towards achieving meaningful connectivity in the digital transformation. GSR-20 adopted a set of best practice guidelines under the theme “[The gold standard for digital regulation](https://www.itu.int/en/ITU-D/Conferences/GSR/2020/Documents/GSR-20_Best-Practice-Guidelines_Final_E.pdf)”. GSR-20 attracted over 2 448 participants and over 90 695 web hits. In addition, regional regulatory roundtable discussions, side events and a training event were held online over the summer of 2020 as part of the GSR+ series of events, working with membership, experts, regional regulatory associations and other partners.

The [GSR-21 Programme](https://www.itu.int/en/ITU-D/Conferences/GSR/2021/Pages/default.aspx) (GSR+), was held virtually as a series of interconnected regional and virtual events across all regions from April to June 2021 to discuss regional regulatory perspectives, challenges and innovative solutions in the lead up to core global sessions from 21 to 25 June 2021, held under the theme *Regulation 4 digital transformation: Accelerating inclusive connectivity, access and use*. The core sessions (GSR-21), held online from 21 to 25 June, attracted 637 participants, including 439 delegates representing 115 Member States countries, that included Government Ministry officials, Heads of Regulatory Authorities and C-level industry executives. the 2021 GSR was fully aligned and integrated into the lead up to WTDC-21, with its traditional Leadership Debate becoming a stop on the Road to Addis. The [GSR-21 Best Practice Guidelines built](https://www.itu.int/en/ITU-D/Conferences/GSR/2021/Documents/BPG%20Adopted/GSR-21_Best-Practice-Guidelines_FINAL_E.pdf) on the collective wisdom of the previous editions spanning over two decades to draw patterns for regulatory uplift for ubiquitous, open and resilient digital infrastructure in the turmoil of global social and economic disruption.

### The positive impact of broadband and ICT Regulation

A series of reports quantified the positive economic impact of broadband, digital transformation and the interplay of ICT regulation both at [regional and global levels](https://www.itu.int/pub/D-PREF-EF.BDR-2018). The main outcomes from the econometric modelling by region suggest that an increase of 10 per cent in mobile broadband penetration would yield an increase in 2.46 per cent in GDP per capita in the [Africa region](https://www.itu.int/pub/D-PREF-EF.BDT_AFR-2019), while the increase in GDP per capita would be of 1.73 per cent in the [Americas region](https://www.itu.int/pub/D-PREF-EF.BDT_AM), 1.82 per cent in the [Arab States region](https://www.itu.int/pub/D-PREF-EF.BDT_ARS-2019), 0.51 per cent in the [Asia-Pacific region](https://www.itu.int/pub/D-PREF-EF.BDT_AP-2019), 1.25 per cent in [CIS region](https://www.itu.int/pub/D-PREF-EF.BDT_CIS-2020). In the Europe region, countries would enjoy an increase of 2.1 per cent. The new [*2020 Report on How broadband, digitization and ICT regulation impact the global economy*](https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Economic-Contribution.aspx) sets out six powerful and concrete steps which will maximize the economic impact of strategic ICT investment decisions, as well as concrete recommendations designed to boost economic impact.

A new 2021 Report on [The impact of policies, regulation, and institutions on ICT sector performance](http://handle.itu.int/11.1002/pub/817bc896-en)uses econometric modelling to pinpoint the impact of the regulatory and institutional frameworks on the performance of the ICT sector and its contribution to national economies. The modelling has allowed to capture fresh insights backed by authoritative data on the evolution of ICT regulation since 2007, the ICT Regulatory Tracker, and a global dataset on ICT markets economics.

A new 2021 ITU Report on [Financing Universal Access to Digital Technologies and Services](https://www.itu.int/en/ITU-D/Conferences/GSR/2021/Documents/Publications/GSR21_Financing%20Universal%20Access%20To%20Digital%20Technologies%20And%20Services.pdf)

provides guidance on the policy and regulatory frameworks needed to attract greater private sector participation in financing universal connectivity, access and uptake, and explores business models for deploying supply and demand side projects and initiatives in the digital era.

The report from the Working Group of the Broadband Commission on the Digital Infrastructure Moonshot for Africa entitled [*Connecting Africa Through Broadband: A strategy for doubling connectivity by 2021 and reaching universal access by 2030*](https://broadbandcommission.org/Documents/working-groups/DigitalMoonshotforAfrica_Report.pdf)  benefited from substantive contributions from ITU. The report attempts to quantify the cost of bridging the broadband gap in Africa and providing a roadmap and action plan for reaching universal broadband connectivity in the region by 2030.

The I[TU report Connecting Humanity: Assessing investment needs of connecting humanity to the Internet by 2030](https://www.itu.int/en/publications/ITU-D/pages/publications.aspx?lang=en&media=electronic&parent=D-GEN-INVEST.CON-2020) estimates the investment needed to achieve universal, affordable broadband connectivity for all humanity by the end of this decade. This study was developed with the support of Saudi Arabia, as part of ITU’s role of the Knowledge Partner for the Digital Economy Task Force of the G20 Presidency.

### #REG4COVID – Global Network Resiliency Platform

In response to the global COVID-19 crisis, ITU launched the Global Network Resiliency Platform ([#REG4COVID](https://reg4covid.itu.int/)) to share information about initiatives that regulators and operators around the world have introduced to help ensure communities remain connected, in key areas such as broadband availability, accessibility and affordability, consumer protection, traffic management and emergency telecommunications. ITU first looked at the immediate responses, and is now looking at the “recovery” phase to address questions such as: What next? Are these measures sustainable? How have regulatory frameworks evolved? What long-term policy and regulatory trends have been introduced for and by the different groups of stakeholders? What works and what doesn’t work?

A series of high-level virtual events on digital cooperation was delivered under the #REG4COVID initiative. The events included [Webinar #1: Connectivity - Situation Assessment](https://www.itu.int/en/ITU-D/bdt-director/Pages/Speeches.aspx?ItemID=253) and [Webinar #2: Connectivity: Best Practices: What Works, What Doesn't](https://www.itu.int/en/ITU-D/bdt-director/Pages/Speeches.aspx?ItemID=255). While addressing the immediate needs during COVID-19, the [Joint Digital Development Action Plan by the ITU/GSMA/World Bank/WEF](https://www.itu.int/en/Pages/covid-19.aspx) and related high level events focused on immediate actions to promote network resilience as well as to ensure access and affordability of digital services.

The #REG4COVID platform also features topical research and analysis such as the [REG4COVID Analytics](https://sway.office.com/4AcrlY9R4BMemONI), a First Overview of ICT Policy and Regulatory Key Initiatives in Response to COVID-19, a [2020 Report on Pandemic in the Internet Age: communications industry responses](https://reg4covid.itu.int/wp-content/uploads/2020/06/ITU_COVID-19_and_Telecom-ICT.pdf), a 2021 report on ​​[Pandemic in the internet age: From second wave to new normal, recovery, adaptation and resilience](https://www.itu.int/en/myitu/Publications/2021/05/11/08/52/Pandemic-in-the-Internet-age), as well as discussion papers on [Last Mile Connectivity in the Context of COVID-19](https://reg4covid.wpengine.com/wp-content/uploads/2020/11/FINAL_Last-Mile-Connectivity_Covid.pdf), the [Economic Impact of COVID-19 on Digital Infrastructure - Report of an Economic Experts Roundtable](https://www.itu.int/pub/D-PREF-EF.COV_ECO_IMPACT-2020), and [Telecommunication industry in the post-COVID-19 world (Report of the 7th ITU Economic Experts Roundtable)​.](https://www.itu.int/en/myitu/Publications/2021/05/11/08/10/The-telecommunication-industry-in-the-post-COVID-19-world) As part of REG4COVID, a Joint-Statement: [UN75 GGF Partnership Dialogue for Connectivity - Accelerating Digital Connectivity in the Wake of COVID-19](https://reg4covid.itu.int/wp-content/uploads/2020/09/UN75_Partnership_Statement_PD_final.pdf), was also adopted.

### ITU ICT regulatory metrics

The ITU [ICT Regulatory Tracker](https://app.gen5.digital/tracker/metrics?_ga=2.112709892.163813749.1631883040-233529912.1625821663&_gl=1*1hkdbqv*_ga*MjMzNTI5OTEyLjE2MjU4MjE2NjM.*_ga_27GW57NRWK*MTYzMTg4MzAzOS4xOC4xLjE2MzE4ODMwODIuMA..) was published to help inform key policy decisions. It is composed of 50 indicators grouped into four pillars: regulatory authority, regulatory mandate, regulatory regime, and competition frameworks, and data are available for the period from 2007 to 2019.

The 2020 [Global ICT Regulatory Outlook Report](https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/giro20.aspx) shares unique, focused research and offers both evidence and practical advice to support regulators embarked on their journey to fifth generation collaborative regulation. ​

Throughout 2020 and 2021, broad consultation with ITU Member States, regulatory practitioners and other stakeholders allowed ITU to crowd-source ideas and feed them into a design thinking process and an [expert review](https://www.itu.int/en/ITU-D/Conferences/GSR/2021/Documents/Publications/G5Benchmark_ReviewBoardReport_21062021.pdf) to enhance the framework of the G5 Benchmark, with key components of a next-generation regulatory blueprint, and to build a series of country case studies on regulatory and institutional frameworks and collaborative governance in selected countries from different regions. The [case studies](https://gen5.digital/publications/) focus on developing a better understanding of the role and impact of collaboration and collaborative governance, and the use of new tools for regulating ICT markets.

The [G5 Accelerator](https://gen5.digital/g5-benchmark/) brings together high-value tools and resources offering practical, step-by-step support for countries already embarked or planning to embark on their digital transformation journey. A set of complementary metrics, including the [ICT Regulatory Tracker](https://app.gen5.digital/tracker/metrics?_ga=2.112709892.163813749.1631883040-233529912.1625821663&_gl=1*1hkdbqv*_ga*MjMzNTI5OTEyLjE2MjU4MjE2NjM.*_ga_27GW57NRWK*MTYzMTg4MzAzOS4xOC4xLjE2MzE4ODMwODIuMA..), an evidence-based tool for decision-makers and regulators in the journey from G1 through G4, and the [G5 Benchmark](https://gen5.digital/g5-benchmark/), is at hand for regulators and stakeholders to better understand the interplay between regulatory policies, markets and economic growth in ICT and digital markets. The metrics enable countries to find their path through the digital transformation and craft custom roadmaps to accelerate progress and amplify impact.

The [ICT Policy Impact Lab](https://app.gen5.digital/lab?_gl=1*jyvqug*_ga*MjMzNTI5OTEyLjE2MjU4MjE2NjM.*_ga_27GW57NRWK*MTYzMTg4MzAzOS4xOC4wLjE2MzE4ODMwMzkuMA..&_ga=2.116715526.163813749.1631883040-233529912.1625821663) pinpoints the impact of regulatory policies and institutional frameworks on the ICT sector performance and its contribution to national economies, and shows data on the impact of reforms on investment. This simulation lab is based on empirical evidence from 145 countries between 2008 and 2019 and has been developed to support ICT regulators and policy makers in reigniting digital markets and economies.

**Regulatory training**

Several training sessions were held for regulators to address digital policy, regulation and market developments and collaborative regulatory approaches for digital transformation.

Within the framework of the ITU Academy, GSMA offered a ‘taster’ training session for policy-makers and regulators on competition policy in the ICT/ mobile sector at GSR-19. The session provided a half-day introduction to the topic, based on content from the United Kingdom Telecoms Academy-accredited two-day course, *Competition Policy in the Digital Age*, which was offered as an online course to policy-makers and regulators through the ITU Academy in 2019.

ITU, USTTI, and World Bank Group (WBG) collaborated to conduct a regulatory best practice training in Nairobi, Kenya, for officials from Eswatini, Ethiopia, Kenya, Somalia, South Sudan, and Sierra Leone. With important support from the Communications Authority of Kenya and the African Telecommunications Union (ATU), the three-day programme addressed the role of an independent communications regulator, licensing frameworks and regulatory best practices that spur investment.

Ahead of the celebrations of the 20th edition of GSR (in 2021), USTTI and ITU teamed up to provide a behind the scenes look at the work taking place to prepare for the deployment and usage of emerging technologies. Experts provided regulators with information on the technological underpinnings of emerging technologies and the spectrum planning that is taking place to enable these new services. The GSR-21 joint ITU-USTTI training provided regulatory officials with information and insights on how emerging technologies can accelerate the digital transformation process, and how such smart technologies and innovation have so far strengthened digital resilience. This training session saw experts further discuss how these emerging technologies interact with key policy and regulatory trends.

ITU is developing training materials for regulators jointly with the World Bank as part of the Digital Regulation Handbook and [platform](https://digitalregulation.org/). These training resources consist of a series of self-paced e-learning modules on regulatory governance, spectrum management, access for all, competition and economics, and consumer affairs, to be made available in the 4th quarter of 2021. An online training programme on digital regulation was developed with CITC Saudi Arabia for delivery in two phases. Phase 1 focusing on regulatory governance and collaborative regulation took place on 29 and 30 March 2021, phase 2 will take place in December 2021.

### Consumer protection

The Digital Consumer Forum for Africa 2019 focusing on data protection, consumer privacy, trust, and security was held in Eswatini and adopted a set of recommendations and best practice guidelines for policy and regulators in the Africa region. The forum preceded a workshop on collaborative approaches for consumer protection for digital financial inclusion with participation from a range of stakeholders representing the finance, insurance, local government and academia, among others.

### Financial Inclusion Global Initiative (FIGI)

Assistance was provided on how to leverage ICTs for digital financial inclusion in China, Egypt, and Mexico, under the Financial Inclusion Global Initiative, a three-year initiative led by ITU, the World Bank Group, the Committee on Payments and Market Infrastructures (CPMI) and supported by the Bill and Melinda Gates Foundation. Activities have focused on providing a gap analysis for Egypt on needs to foster a secure resilient infrastructure for ICTs, mapping of infrastructure in Mexico, defining pilot projects to leverage ICTs to foster digital financial services to eradicate poverty in China, defining and putting into place collaborative regulatory mechanisms to underpin a whole-of-government approach in Mexico, and providing training on basic digital financial skills for the poor in Mexico.

ITU conducted a Collaborative Regulation Workshop for Mexico in February 2020 and a National Financial Inclusion Global Initiative (FIGI) Security Clinic & QoS Workshop for Mexico in November 2020. A further capacity building workshop was held in September 2021, focusing on awareness raising and digital skills training for DFI. Materials will also be prepared to leverage ICTs for DFI in rural areas (to be delivered by December 2021).

Cross-sectoral cooperation was strengthened through digital government, digital agriculture (Refer ASP RI 2) and digital financial initiatives. ITU is currently implementing a digital finance project ([FIGI](https://www.itu.int/en/ITU-T/extcoop/figisymposium/Pages/default.aspx)) in China funded by the Bill &Melinda Gates foundation in cooperation with CAICT and in coordination with the World Bank.

### European Union/African Union Digital Economy Task Force recommendations

As an active member of the [European Union-African Union Digital Economy Task Force (EU-AU DETF)](https://ec.europa.eu/digital-single-market/en/news/new-africa-europe-digital-economy-partnership-report-eu-au-digital-economy-task-force) , ITU participated in developing a shared vision, a set of common agreed principles and a list of policy recommendations and actions in a report aimed at addressing the principal barriers faced by the Africa region as it seeks to develop the digital economy and society. The main areas addressed include accelerating universal access to affordable broadband, guaranteeing essential skills for all to enable citizens to thrive in the digital age, improving the business environment and facilitating access to finance and business support services to boost digitally enabled entrepreneurship, and accelerating the adoption of e-services and the further development of the digital economy for achieving the Sustainable Development Goals. Recommendations were shared with the African Union Commission for the development of the African Union Digital Transformation Strategy.

### Economic regulation and costing

In the framework of ITU-D Study Group 2 Question 4/1, a new set of [Guidelines on Cost Modelling](https://www.itu.int/md/D18-SG01.RGQ-C-0324/) addressed to national regulatory associations were approved to provide a level of detail that will be useful for implementing cost and price regulation. The [ITU Regional Economic Dialogues (RED)](https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Events.aspx) were organized in the Europe, CIS, Americas, and Africa regions, addressing the economic impact and recovery strategies to build back better and ensure connectivity and business continuity during and after the COVID-19 crisis, the next generation interconnection and peering arrangements in the digital market, and the business models and pricing strategies for new services (OTT, IoT and data). The recommendations and outputs were shared with the ITU study groups.

In terms of capacity building, a multi-stakeholder training on *Advances in Regulatory Costing and Pricing Strategies for Digital Services for the Arab States and the Caribbean Countries*, as well as on competition analysis in digital applications environment for the Asia-Pacific region were organized during 2019-2020. Direct assistance on market analysis, tariff policies and cost modelling was provided to Sao Tome and Principe, Palestine, and Comoros. A specific training was organized in each country in order to guarantee essential national skills for the staff of the national regulatory authorities.

### Digital Regulation Handbook and platform

The World Bank and the International Telecommunication Union jointly developed the [Digital Regulation Handbook](https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/DigiReg20.aspx) and a new [online digital regulation platform](https://digitalregulation.org/) to continuously update and revise the ICT Regulation Toolkit and Handbook. The Handbook provides a high-level snapshot of the current state of play in 2020, while the platform is dynamic and will be updated continually over the coming years to reflect the rapidly changing digital world by providing more detailed guidance and case studies of best practice in regulation of the digital economy. Thematic areas include regulatory governance and independence, competition and economics, access for all, consumer affairs, data protection and trust, spectrum management, emerging technologies, technical regulation, and emergency communications.

### Direct assistance

Concentrated assistance for Portuguese-speaking countries was provided in Sao Tome and Principe on quality of service of networks and numbering. Direct assistance to the Democratic Republic of the Congo for the national universal service obligation (USO) and numbering workshop was delivered in Kinshasa. Direct assistance in the transition to digital terrestrial television was also granted to Central African Republic, Equatorial Guinea, and Sao Tome and Principe, and their roadmaps were updated. Direct assistance was also provided to Liberia and Gambia in 2019 through the organization of two workshops on cybersecurity readiness assessment and spectrum management in both countries. Support was provided to Antigua and Barbuda in reviewing the draft National Telecommunications Bill and to identify priority supporting regulations consistent with the Act. Recommendations for the regulatory regime and complementary regulations to the draft bill were put forward for consideration. Assistance was provided to Trinidad and Tobago in the further development of a national ICT plan (Fast Forward II) through a workshop session. This took the form of technical advice to the government to ensure organizational, functional and governance structures that are consistent with the national agenda and goals for the ICT sector. In November 2019 presentations were delivered in pursuit of the review and reform of the Data Protection and Electronic Transitions Act of Trinidad and Tobago. These concentrated on international best practice, and the roadmap both on data protection and on electronic transactions, emphasizing challenges and opportunities for updating and improving local laws passed in 2011.

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| **REGIONAL INITIATIVES**Americas RI3: Deployment of broadband infrastructure, especially in rural and neglected areas, and strengthening of broadband access to services and applications* For Antigua and Barbuda, the ITU drafted the country’s National Telecommunications Bill in 2018. Recommendations for the regulatory regime and complementary regulations to the draft bill/Act were also put forward for consideration;
* ITU, together with the Telecommunications Unit, Ministry of Innovation, Science and Smart Technology, Barbados, held the following online Workshop - Advances in regulatory costing and pricing strategies for digital services for the Caribbean Countries, 9 ‐13 November 2020;
* ITU is developing two important projects with the Brazilian regulatory body ANATEL to provide the country with a regulatory environment conducive to digital transformation, and for methodological support for the development of studies for structuring the Agency as the regulatory body of the sector. In addition, ITU is in the process of reviewing five Terms of References for the development of capacities of ANATEL officials.
	+ The first project between ITU and ANATEL , with a budget of USD 7 million, aims to assist the agency with the review of the telecommunications regulatory framework. The project includes a number of recommendations (i) to modernize and update the Brazilian General Law of Telecommunications (LGT); (ii) to change the scope of the concession contracts with telecommunication service providers, aiming at increasing infrastructure investments and the expansion of broadband access networks; (iii) to create a Strategic Plan of digital transformation; (iv) to build confidence and improve the regulator’s relationship with consumers of telecommunication services; (v) to make the Brazilian regulator a reference in the use of data & analytics for decision making, and (vi) to provide training courses to improve the performance and management of the workforce necessary to fulfil the responsibilities and the mandate of the regulator;
	+ The second project aims to support the Brazilian regulator ANATEL in the revision of its Strategic Plan.
* A case study on the evolution of ICTs considering the economic perspective and the policy and regulatory environment was prepared for Ecuador;
* The ITU Regional Economic Dialogue on Telecommunications/ICTs for Latin America and the Caribbean (RED-AMS) was organized by the ITU Americas Regional Office, together with the BDT Regulatory and Market Environment Division (RME) in close collaboration with the Federal Telecommunications Institute - IFT of Mexico. A total of 176 delegates from 14 countries participated in the Dialogue, which took place in September 2018. RED brings together representatives from Regulatory Associations, Regional Consumer Associations and Private Sector Associations, such as the Eastern Caribbean Telecommunications Authority (ECTEL), the Telecommunications Regional Technical Commission - Central America (COMTELCA), la Procuraduría Federal del Consumidor de México (PROFECO), GSMA, the Asociación Interamericana de Empresas de Telecomunicaciones (ASIET), and others;
* ITU-D Study Group 1 Question 4/1 Experts’ Knowledge Exchange - Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks was held on 6 September 2018 in Mexico, back-to-back with the Regional Economic Dialogue of Telecommunications/ICTs for Latin America and the Caribbean (RED);
* The ITU Policy and Economic Colloquium 2020 - ITU Americas IPEC 2020, was held online, in October 2020. This activity was organized by the BDT, in close collaboration with the Supervisory Agency for Private Investment in Telecommunications (OSIPTEL) of Peru. It included a webinar on COVID-19: Challenges and opportunities for Telecommunications/ICT in the Americas Region, the Regional Economic Dialogue (RED), and a meeting of the ITU-D Question 4/1. A total of 240 participants registered, from 39 countries around the world, with 24 out of the 39 countries from the Americas region;
* The ITU Policy and Economic Colloquium 2021 - ITU Americas IPEC 2021, was held online, from 10 to 11 May 2021. This event was organized by the BDT, in close collaboration with the Superintendency of Telecommunications (SIT) of Guatemala. It included a GSR Regional Regulatory Roundtable for the Americas Region, the Regional Economic Dialogue (RED), and a meeting of the ITU-D Question 4/1. IPEC-21 was attended by over 260 participants from 24 Member States from the Americas region and 36 Member States from other regions.
* The Forum on the Conformance and Interoperability (C&I) in Innovation for Youth and a workshop on Establishing a Mutual Recognition Agreement (MRA) for the Caribbean Countries were held in Port-of- Spain, Trinidad & Tobago, in June 2018;
* The Americas region has been committed to designing and developing a Conformance & Interoperability Training Program (CITP) in close coordination with the Capacity and Digital Skills Development (CDS) Division and Telecommunication Networks and Spectrum Management Division. This program will be delivered online, through the ITU Academy and in close coordination with the Capacity and Digital Skills Development (CDS) Division and taking advantage of lessons learned from the Spectrum Management Training Program (SMTP). As of September 2021, the CITP included10 modules. Of these, 5 had been developed, 3 have been peer reviewed and 2 were still pending;
* In 2021, ITU offered the module "Start-ups readiness for IoT deployment training: Pre-compliance testing" as an alternative to face to face training. More than 40 participants were certified;
* From May to November 2018, ITU, in coordination with ASETA, and beneficiary countries (Andean countries: Colombia, Ecuador, Peru and Bolivia) produced a study on "Interconnectivity & Reduction of telecommunication service prices and Internet access cost";
* From April to August 2018, ITU supported Surinam to define its National IXP model;
* ITU, in collaboration with FAO and CTU, organized an e-Agriculture Strategy Development Regional Workshop for the Caribbean in July 2018 in Georgetown, Guyana. As an outcome of this Forum ITU, FAO and Compete Caribbean agreed to collaborate on a project to develop a Regional e-Agriculture Strategy for the Caribbean and a national e-Agriculture Strategies for four (4) countries;
* In the area of m- and e-health initiatives, ITU and the Pan American Health Organization (PAHO) agreed on using the [National eHealth Strategy toolkit](https://www.itu-ilibrary.org/science-and-technology/national-ehealth-strategy-toolkit_pub/8069793a-en) for Guyana. The complete draft strategy was finalized and submitted as an ITU contribution, with PAHO and Guyana continuing this initiative;
* BDT enhanced capacity and expertise in Bolivia and Paraguay, two landlocked developing countries, by sharing connectivity guidelines and best practices, and providing policy guidance, through two separate 2018 country case study, one on [Bolivia](https://www.itu.int/pub/D-LDC-LLDC_AM.01) and one on [Paraguay](https://www.itu.int/pub/D-LDC-LLDC_AM.02): “Landlocked developing countries (LLDCs) in the Americas: Connectivity challenges and opportunities”;
* The annual event in Americas on Policy and Economics - ITU Policy and Economics Colloquium (IPEC), took place in Santo Domingo, Dominican Republic from 26 to 30 August 2019. The event was divided into two parts: A two-day Dialogue Workshop on 5G and New Technologies, followed by a Regional Economic Dialogue for Latin America and the Caribbean (RED);
* ITU-D Study Group 1 Question 4/1 Experts’ Knowledge Exchange - Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks was held on 31 August 2019 in Dominican Republic, back-to-back with the Regional Economic Dialogue of Telecommunications/ICTs for Latin America and the Caribbean (RED);
* ITU-D is implementing a 3-year project to harness the potential of Information and Communication Technologies (ICTs) to strengthen Digital Financial Services (DFS) and Digital Financial Inclusion (DFI) in China, Egypt and Mexico. Within this context, ITU-D raised awareness on the enabling environment for Financial Inclusion in Mexico through the preparation of a draft country assessment report on Digital Financial Inclusion;
* ITU has implemented two (2) FIT (Fund in Trust) projects “Reforma a la Ley General de Telecomunicaciones de República Dominicana” and “Soporte institucional al Instituto Dominicano de las Telecomunicaciones (INDOTEL)”. The projects provided technical assistance to the Dominican Institute of Telecommunications (INDOTEL) in the formulation of policies and standards to meet the challenges presented by new technologies and changes in the ICT sector;
* ITU, together with FAO, co-organized the event “ICT innovation Week” in Montevideo, Uruguay at the kind invitation of Antel in August 2019. The event was attended by 136 people from Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, El Salvador, France, Guyana, Honduras, Italy, Japan, Mexico, Nicaragua, Panama, Peru, and Uruguay;
* In 2020 ITU continued to update the interactive transmission maps, especially those of Guatemala, Honduras and Suriname;
* On request, in August 2019 ITU provided collaborative assistance to St. Kitts and Nevis in its development of a National Broadband Plan with a Broadband Strategy component in order to take full advantage of the digital economy in the 21st century;
* Over a period of 6 months from July 2019, the International Telecommunication Union (ITU) developed and delivered the Digital Policies Programme (EPD) – Re-Sensitizing Government Officials to the Use of ICTs in the Caribbean. The programme targeted senior public servants as well as other public servants involved in any form of public service delivery;
* During the period of November 2019, the ITU delivered presentations to the public sector and the private sector in pursuit of reform of the Data protection and Electronic Transitions Act of Trinidad and Tobago;
* In 2020 ITU provided technical assistance to Trinidad and Tobago in the development of the following:
	+ Draft National Electronic Identity Framework.
	+ Draft National Electronic Identity Roadmap.
	+ Draft National Electronic Identity Policy

Arab States Regional Initiative ARB RI3: * Over 90 partners were attracted to contribute to the annual Digital Inclusion Week organized in partnership with UNESCO in 2018, 2019 and 2020 (it is still ongoing in 2021). The week included capacity building and awareness raising activities in addition to challenges on a variety of themes pertaining to ICT accessibility for persons with disabilities, digital financial inclusion, gender and youth issues;
* A face to face “Train the trainers” was developed and customized for the Arab Region on “Accessible Digital Content and Remediation for the stakeholders delivering digital financial services” and delivered to policy makers in 2018 in Cairo, Egypt.
* Awareness was raised on issues pertaining to cybersecurity for financial services through a regional workshop in 2018 in Cairo, Egypt and a national workshop in Iraq in 2019.
* ITU contributed to the establishment of an enabling environment for digital financial inclusion in Egypt through the country implementation of the Financial Inclusion Global Initiative. This included organizing the global FIGI symposium in Egypt, delivering an assessment report on the enabling environment for digital financial inclusion in Egypt from the ICT sector perspective in addition to building capacities on security of digital financial services via a national security clinic workshop in collaboration with the TSB in 2020.
* ITU contributed to tackling the digital financial literacy of children through a regional project titled Malee in partnership with Meem Ain from Saudi Arabia.
* ITU raised awareness on the gaps and recommendations needed to establish an enabling environment for digital financial inclusion in Sudan through an assessment report developed for that purpose in 2018.

Asia-Pacific RI4: Enabling policy and regulatory environments* ITU assisted ASEAN on two frameworks: i) Next Generation Universal Service Obligation (USO 2.0) and ii) child online protection that was endorsed by the ASEAN Telecommunication Senior Officials and ministers;
* ITU and NBTC (Thailand) cooperated in building the skills of 50 researchers in Thailand in the area of blockchain. ITU also established collaboration between the United Nations University and ITU Academia members;
* ITU is providing two technical assistances, one in the area of a spectrum roadmap and a second one on new licensing frameworks for the country and is also planning to arrange a workshop on Consumer Protection with special attention to data protection for the Pacific countries;
* ITU has conducted several studies on policies related to co-deployment of fibre optic cables with the energy infrastructure and also on innovative business models in the telecommunication sector. These studies were presented in the GSR+ASP event, in June 2021 that was held in preparation for the Global Symposium for Regulators.

CIS RI4: Development and regulation of infocommunication infrastructure to make cities and human settlements inclusive, safe and resilient* Following a request from membership, ITU published a study on broadband regulation in CIS and neighbouring countries;
* A base-line assessment on the level of use of various tools and platforms and the level of demand in the CIS countries is being carried out.
* Direct expert assistance is being provided to Kyrgyzstan on technical regulation of the quality of service, and on collaborative regulation for Armenia.

Europe RI1: Broadband infrastructure, broadcasting and spectrum management* Two countries were provided with technical assistance: a national plan for broadband development 2020-2025 was developed for Albania and a special policy paper on ICT infrastructure development and investment was developed for North Macedonia;
* The annual Regional Regulatory Forums, Regional Economic Dialogue and GSR regional regulatory roundtables provided an additional platform for European regulators to discuss emerging trends;
* The Regional Econometric Study for Europe on the Economic Impact of Broadband, Digitization and ICT Regulation was developed and launched.
* Two collaborative regulation case studies for Moldova and Romania were developed in close cooperation with key stakeholders at the country level.
* Technical assistance in the field of broadband mapping regulation and enabling environment is being provided to Bosnia and Herzegovina.
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| **STUDY GROUPS**ITU Member States, Sector Members and experts shared their perspectives on *OTT regulation and economic impact*during the ITU-D Study Group 1 rapporteur group meetings. Discussion took place on [Question 3/1](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ03.1&stg=1) (*Emerging technologies, including cloud computing: m-services, and OTTs: Challenges and opportunities, economic and policy impact for developing countries*) and [Question 4/1](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ04.1&stg=1) (*Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks*). The presentations and discussion papers can be found on the workshop [website](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/joint-session-Q3-1-Q4-1_oct19.aspx). A joint annual deliverable was elaborated accordingly on “[Economic impact of OTTs on national telecommunication/ICT markets](https://www.itu.int/oth/D0723000003/en)” (released in June 2020). The paper reflects the growing importance of over-the-top (OTT) applications and their increasing ubiquity and influence in a digital world. This helps ICT stakeholders face complex questions, such as how OTTs are impacting demand, revenue and cost of mobile network operators. It also reflected on the questions of how ICT stakeholders can build partnerships between MNOs and OTTs for maximum potential, and how the transition from ICT regulation from past models can keep pace with the new and rapidly changing landscape of OTTs.A [Cloud for COVID-19 Response web dialogue](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/webinar-Q3-1-may20.aspx) **was held** in 2020 as part of the work of Question 3/1. It focused on ways of leveraging cloud computing amid the current COVID-19 crisis to ensure business continuity, contribute towards social goals and enable fair innovation opportunities. Speakers highlighted cloud use cases designed by public institutions and private players in response to connectivity challenges and needs of all kinds that have emerged amid the crisis. An open discussion with all participants explored the related challenges, opportunities and lessons learned. The outcomes are included in the [final report of Question 3/](https://www.itu.int/en/myitu/Publications/2021/07/22/12/07/Emerging-technologies)1.**Question 4/1 included two webinars were held, one on the** [Economic implications of COVID-19 on national telecommunication/ICT infrastructure](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/webinar-Q4-1-june29.aspx), in June 2020, and the other on the [impact of unequal access to ICT infrastructure on the geography of COVID-19 diffusion](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q4-1-july29.aspx) in July 2020. A debate took place on [how more inclusive ICT policy and infrastructure influence could stem the spread of COVID](https://www.itu.int/en/myitu/News/2020/10/05/11/54/How-more-inclusive-ICT-policy-and-infrastructure-influence-could-stem-the-spread-of-COVID-19). The outcomes are included in the [final report of Question 4/1](https://www.itu.int/en/myitu/Publications/2021/07/06/09/42/Economic-policies-and-methods-of-determining-the-costs-of-services) and in the [Cost modelling Guidelines](https://www.itu.int/en/myitu/Publications/2021/07/06/10/00/Guidelines-on-Cost-Modelling).A webinar on [Unsolicited Commercial Communications/ Nuisance calls: Are consumers more vulnerable in the era of COVID-19](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/Webinars/2020/Q6-1-july02.aspx)was held in July 2020 as part of the work of [Study Group Question 6/1](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ06.1&stg=1) (Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks). The outcomes of the webinar were captured to enrich the annual deliverable “Unsolicited commercial communication challenges and strategies”, released on 3 February 2021. This paper provides an overview of challenges linked to nuisance and fraudulent calls and text messages, and the strategies adopted by different countries to tackle the problem. The outcomes are included in the final report of Question 6/1.Work of the ITU-D Study Group 1 ([Question 1/1](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ01.1&stg=1), Question 3/1, Question 4/1) continue to feed into other ITU related activities, including the Regional Economic Dialogues, GSR+ events and the Digital Regulation Handbook and platform.  |

## 10. Statistics: Helping countries with evidence-based ICT policy adoption for digitally inclusive societies

### Measuring Digital Development series

The [2018 edition](https://www.itu.int/en/ITU-D/Statistics/Pages/publications/misr2018.aspx) of the *Measuring Information Society Report* (MISR) reported on the state of digital development and featured deep dives on ICT skills; revenue and investment in the telecommunication sector; and ICT affordability. It was the 10th and final edition of the series. In 2019, the series was replaced by the *Measuring Digital Development* (MDD) series, a series of statistical and analytical publications. The first publication in the MDD series was [Facts and Figures](https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx) 2019. ITU’s *Facts and Figures* provides a timely assessment of the state of digital development globally and in all regions, through a set of key ICT indicators with estimates for the current year. The [2020 edition](https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx) was launched on 30 November 2020. The 2020 edition of the [*ICT Price Trend*](https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx)*s* report, the second annual publication in the MDD series was released in June 2021. This publication provides a unique insight into the affordability of ICT services, by analysing and comparing data from mobile voice services, mobile data, and fixed broadband for 196 economies. The launch was preceded, in March 2021, by a [policy brief](https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2020/ITU_A4AI_Price_Briefing_2020.pdf), jointly published with the Alliance for Affordable Internet, with whom ITU partners to collect the price data, and the release of an [app to explore and visualize](https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx) the richness of ITU’s ICT price dataset.

In September 2021, ITU in partnership with the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), released [*Connectivity in the Least Developed Countries: Status report 2021*](https://www.itu.int/itu-d/reports/statistics/connectivity-in-the-least-developed-countries-status-report-2021/). The report assesses the current level of digital connectivity in the 46 UN-designated Least Developed Countries (LDCs) and provides practical solutions to improve digital access, as well as concrete policy recommendations to help accelerate progress towards universal and meaningful connectivity.

Launched in June 2021, the new [Digital Development Dashboard](https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx) provides a user-friendly overview of digital development for 196 economies. The Dashboard features 37 indicators related to infrastructure and access, Internet use, and enablers and barriers. It presents 10-year trends and comparisons with regional peers. A ‘light’ version is available for mobile and low-resolution devices, while two-page country profiles can be downloaded as PDFs. The underlying data can also be downloaded in Excel format.

ITU continues to release twice a year its World Telecommunication/ICT Indicators Database (WTID), the latest edition of which was released in [July 2021](https://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx).

Between January to April 2021, and in conjunction with the six Regional Preparatory meetings (RPMs), BDT published the [Digital Trends reports series](https://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC21/Pages/RPM/Digital-Trends-Reports-2021.aspx). This new ITU publication series provides regional overviews of trends and developments in ICT infrastructure, access and use within each ITU region. The reports highlight changes in ICT adoption and during the Covid-19 pandemic, track the evolution of regulation, and review progress and challenges in the area of the ITU Regional Initiatives for each region. The reports highlight progress and identifying ICT development priorities in each region.

Since 2018, the Secretariat has made several attempts to resume the publication of an index measuring the level of ICT developments, following the discontinuation of the ICT Development Index (IDI) in 2017. In March 2020, the Secretariat proposed to develop a [new index](https://www.itu.int/en/ITU-D/Conferences/TDAG/Documents/2020%20TDAG/TDAG-20%20Web%20Dialogue%20Index%20Framework.pdf) that would link digital development to the SDGs and in September 2020, the Secretariat made [another proposal](https://www.itu.int/en/ITU-D/Statistics/Documents/events/egti2020/IDI2020_BackgroundDocument_E.pdf) for an index that built on the original IDI. In both cases, Member States did not reach consensus.

Since 2018, attempts either to publish the ICT Development Index (IDI) in line with Plenipotentiary Conference (PP) Resolution 131 (Rev. Dubai, 2018) or to develop an entirely new index have been unsuccessful, as no consensus could be reached within the Expert Group on Telecommunication/ICT Indicators (EGTI) and the Expert Group on ICT Household Indicators (EGH). At a virtual consultation in June 2021, ITU’s Administrative Council agreed that further discussion and any decision regarding the future of the IDI should be deferred to the next Plenipotentiary Conference. Consequently, no index will be published until further notice.

### Capacity development in statistics

In 2019, an ICT statistics workshop, held in Tashkent, Uzbekistan, was delivered to officials from national statistics offices and focal points for ICT statistics in ministries of communications and regulators in countries across the Arab States region and CIS region. A similar workshop took place in the Africa region. The objective of the workshop was to strengthen the capacity of countries in the regions to produce national statistics and indicators on telecommunications and ICTs according to international standards, with a focus on the key statistics included in the ITU World Telecommunication/ICT Indicators (WTI) database.

A sub-regional workshop on ICT indicators on the collection of ICT data and statistics, improving data availability, quality and reporting was held in Trinidad and Tobago in April 2019. The two-day, 12-session workshop encompassed an overview of the work on ICT measurement undertaken globally by the ICT Data and Statistics Division, including the ITU Manual and Handbook, ICT Development Index (IDI) and the ICT Price Basket (IPB).

Since 2018, the capacity of administrations to carry out data collection, produce and analyse international comparable ICT indicators has been improved through several activities. This included a regional workshop on ICT statistics for the CIS region in Almaty, Kazakhstan, for the Asia-Pacific region in Manila, Philippines, for the Africa region in Lilongwe, Malawi and for the Arab States region in Manama, Bahrain. Sub-regional workshops on ICT statistics for countries in the Asia-Pacific region took place in Nadi, Fiji; and a SADC regional workshop on ICT statistics in Botswana.

The 2020 edition of the ITU [Handbook for the Collection of Administrative Data on Telecommunications/ICT](https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx) was released in June 2020. The Handbook regroups over 90 internationally agreed indicators to help track global ICT developments, focusing on indicators from the telecommunication services sector mainly collected by national regulators. Released at the same time, the 2020 edition of the ITU [Manual for Measuring ICT Access and Use by Households and Individuals](https://www.itu.int/en/ITU-D/Statistics/Pages/publications/manual.aspx) focuses on demand-side indicators, mainly collected by national statistical offices. The Manual is designed as a practical tool to guide countries in their ICT data production, serving as a basic reference when preparing, designing and implementing ICT household surveys.

To reach a broader audience and reduce reliance on in-person workshops for capacity development, ITU launched its first online training on ICT statistics in June 2021. Available for free on the ITU Academy platform, “[Measuring digital development: Telecommunication/ICT indicators](https://academy.itu.int/training-courses/full-catalogue/measuring-digital-development-telecommunicationict-indicators)” is the first in a three-part series of online courses to be released in 2021.

### Expert groups

The Expert Group on Telecommunication/ICT Indicators (EGTI) was created in May 2009 with the mandate to revise the list of ITU supply-side indicators (i.e. data collected from operators), as well as to discuss outstanding methodological issues and new indicators. The Expert Group on ICT Household Indicators (EGH) was established in May 2012 to review the statistical indicators for measuring ICT access and use by households and individuals. Both expert groups are open to ITU membership, and to ICT experts and statisticians familiar with data collection on these indicators.

EGTI and EGH meet annually in September or October. During their meetings, the expert groups review the work of the thematic working groups for the current year and propose the themes for the following calendar year (click here for more information about [2018](https://www.itu.int/en/ITU-D/Statistics/Pages/events/egti2018/default.aspx), [2019](https://www.itu.int/en/ITU-D/Statistics/Pages/events/egti2019/default.aspx), [2020](https://www.itu.int/en/ITU-D/Statistics/Pages/events/egti2020/default.aspx) and [2021](https://www.itu.int/en/ITU-D/Statistics/Pages/events/egti2021/default.aspx) editions).

### Partnerships

ITU actively contributes to advancing the statistics agenda within the UN system. Lately, ITU has been playing a central role in the implementation of the UN Secretary General’s [Digital Cooperation Roadmap.](https://www.un.org/en/content/digital-cooperation-roadmap/) Between January and August 2021, ITU led the Sub-working group on Key Action 1A of the Roundtable on Global Connectivity, one of the eight roundtables of the Roadmap. The group was tasked with 1) developing a baseline for universal and meaningful connectivity, that inform on where countries currently stand in terms of availability and quality of digital connectivity; and 2) formulating connectivity targets for 2030, that will indicate where countries ought to be by then. A draft of the outcome document of the Sub-working group on Key Action 1A of the Roundtable on Global Connectivity of the United Nations Secretary General’s Roadmap for Digital Cooperation was circulated to the members of the Roundtable on Global Connectivity for feedback in August 2021.

### ITU continues to be an active member of the [Partnership on Measuring ICT for Development](https://www.itu.int/en/ITU-D/Statistics/Pages/intlcoop/partnership/default.aspx), and together with UNCTAD and UIS, is one of the three members of its Steering Committee. In 2019, the partnership continued to engage actively in monitoring the Sustainable Development Goals (SDGs) through its Task Group on ICT for the SDGs, co-led by ITU and UNDESA. During the 2019 WSIS Forum, the partnership organized a session on *measurement of progress towards the SDGs through ICT indicators*. This session discussed the progress made by the Task Group and the thematic list of ICT indicators to measure ICT availability and use in sectors relevant to the SDGs that are not covered in the global SDG indicators framework. The list includes 26 ICT indicators, related to 27 SDG targets belonging to 11 goals, which were discussed and agreed upon through a consultation process involving governments and international organizations. The final list has been submitted to the 51st session of the United Nations Statistical Commission (UNSC), which took place in March 2020, for endorsement.

ITU also chairs the [Committee of Experts on Big Data and Data Science](https://unstats.un.org/bigdata/)’s task team on mobile phone data and is a member of UNSD’s [Committee for the Coordination of Statistical Activities](https://unstats.un.org/unsd/ccsa/).

### World Telecommunication/ICT Indicators Symposium

The [16th edition](https://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2018/default.aspx) of the World Telecommunication/ICT Indicators Symposium (WTIS) was held in December 2018 with the main focus on the impact of telecommunications/ICTs and emerging technologies on social and economic development. The [17th edition](https://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2020/default.aspx), initially planned for April 2020, was postponed due to the COVID-19 pandemic and held on 1-3 December 2020, under the theme “Towards an inclusive digital society”. It gathered over 400 experts and practitioners.

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| **STUDY GROUPS**Guided by the ITU Member States and Sector Members, concrete steps were taken in the coordination of statistics-related activities between ITU-D study groups and the Expert Group on Telecommunication/ICT Indicators (EGTI) and the Expert Group on ICT Household Indicators (EGH). Experts and management team members are participating in meetings of the other groups and reporting on areas of common interest. Liaison statements have also, been exchanged between the groups. This collaboration aims to contribute towards implementing Resolution 131 (Rev. Dubai, 2018) of the Plenipotentiary Conference and Resolution 8 (Rev. Buenos Aires, 2017) of WTDC and to share information. |

## 11. Strategic Initiatives: Giga, Connect2Recover and I-CoDI

In addition to the results described in each thematic priority above, the 2018 – 2020 period also saw the launch of Giga, Connect2Recover and I-CoDI, which are significant strategic initiatives that cut across multiple thematic priorities. These are by design global in nature and have the potential to scale across multiple countries and multiple regions.

### Giga

Giga is a joint ITU-UNICEF project, launched at the 2019 UN General Assembly, which has the objective to connect every school to the Internet and every young person to information, opportunity, and choice. Some 3.7 billion people in the world do not use the Internet, of whom 360 million are young people. A lack of access to the Internet means children and young people are excluded from the wealth of information available online, limiting their resources to learn and to grow, and to fulfil their potential. Closing the digital divide requires global cooperation, leadership, and innovation in finance and technology.

The Giga approach consists of four pillars: **map** the connectivity of every school and use it to show where connectivity gaps are, taking advantage of new technologies to create a real-time map of school locations and their connectivity level; work with governments and advise them on building affordable and sustainable country specific models for **finance** and delivery; determine the best possible technical solutions to connect schools and provide countries with safe, secure, reliable, fit for purpose infrastructure to support future digital development needs; and partner with governments, UNICEF’s Reimagine Education, Generation Unlimited, the Digital Public Goods Alliance, and ITU’s digital skills team to ensure every young person has access to information, opportunity, and choice . By the third quarter of 2021 almost 1 million schools in 40 countries have been mapped. Giga is active in 19 countries in Africa, Central Asia, the Eastern Caribbean and Central America. Already more than 3 000 pilot schools have been connected by Giga partners in Kazakhstan, Kenya, and Rwanda, amongst others, with similar pilots underway in Kyrgyzstan, Sierra Leone, and Uzbekistan. Partners include Ericsson, UK Foreign, Commonwealth & Development Office (FCDO), Dubai Cares, Softbank, Musk Foundation, Boston Consulting Group (BCG), Nic.br and Actual.

For the remainder of 2021 Giga is working to scale and expand activities in existing and new countries and regions, explore new financing mechanisms (such as the Giga bond) and pilot new connectivity solutions. Additional details on Giga can be found at <https://gigaconnect.org/>.

### Connect2Recover

In September 2020, with the support of the Ministry of Internal Affairs and Communications of Japan and the King Salman Humanitarian Aid and Relief Centre of the Kingdom of Saudi Arabia, ITU launched the Connect2Recover initiative. This initiative aims to help less connected countries, especially - but not exclusively - in the Africa region, to reinforce their digital infrastructure and ecosystems, to enhance means of utilizing digital technologies such as telework, e-commerce, remote learning, and telemedicine in the wake of COVID-19.

The Connect2Recover initiative consists of three key elements. First, Connect2Recover will develop a methodology for identifying gaps and bottlenecks in the use of digital networks and technologies at country level to respond to and mitigate the consequences of the COVID-19 pandemic, support preparedness for any similar emergencies in the future, and enable recovery and readiness for the “new normal". Second, Connect2Recover will assist countries in assessing their needs, gaps and bottlenecks, and develop strategies to ensure that the digital infrastructure and ecosystems adequately support recovery efforts and the “new normal". Finally, Connect2Recover will conceptualize and implement pilot projects to test specific technological solutions in line with national country strategies and policies and will support deep-dive studies in specific areas of digital policy as prioritized by the selected countries, such as digital finance, e-education, e-health, e-government, or teleworking.

Phase 1 of the Connect2Recover has developed a global methodology to identify gaps and bottlenecks in the use of digital networks and technologies. The global methodology is being finalised and will be launched in Q4 of 2021.

Phase 2 of the Connect2recover creates resilient digital infrastructure. Under phase 2, as a result of congestion due to pandemic or other emergencies, an Internet resiliency assessment is underway in Armenia and Kazakhstan. In the aftermath of the earthquake in Haiti, an immediate Internet resiliency assessment and assessment on impact of disaster has been commissioned to ensure resilient digital infrastructure under phase 2 of Connect2Recover.

Phase 3 of Connect2Recover establishes national strategies and creates an enabling environment. A phase 3 study is carried out to examine the feasibility of establishing a Single Caribbean Regional Telecommunications Regulator for the Caribbean Community (CARICOM) in the Americas region. In the Arab region, Connect2Recover has commissioned the updating of the broadband transmission map for the region through a robust data collection and mapping exercise.

Under Phase 4 of Connect2Recover, focusing on the education pillar, two pilot projects providing infrastructure and connectivity to schools and communities were implemented. The first pilot connects ten out of 63 schools in Rwanda to the Internet. The provider to implement the pilot was selected through competitive bidding, deployment work has started, and connectivity is expected to be provided by end of September 2021. The second pilot provides connectivity to a community centre and a school while enhancing digital literacy in Haiti.

In order to accelerate digital inclusion during the COVID-19 recovery globally and to encourage participation from the academia, the Connect2Recover launched an [international research competition](https://www.itu.int/en/ITU-D/Pages/connect2recover/research-competition/default.aspx#register) to identify promising research proposals that would entail authoritative research work to develop digital infrastructure for better education, healthcare and job creation.

Supporting the call to bridge the digital divide focusing on Least Developed Countries (LDCs), Land Locked Developing Countries (LLDCs) and Small Island Developing States (SIDS) and to build back better with broadband for more resilience, [a webinar](https://www.itu.int/en/ITU-D/Pages/events/connect2recover/building-back-better-with-broadband/default.aspx) was organised by the Connect2Recover Initiative in May 2021. This webinar aimed at reinforcing the digital infrastructure and ecosystems of beneficiary countries. Showcasing the role of new technologies during the Emerging Technologies week (9 July 2021) Connect2Recover and Giga jointly hosted [a session](https://www.itu.int/en/ITU-D/Conferences/ET/2021/Pages/Programme.aspx) to highlight how emerging technologies and strong national digital infrastructure ecosystems can help countries remain operational and resilient in times of a major global crisis, and in particular, to contribute to the achievement of SDG 4 (Quality Education).

### ITU International Centre of Digital Innovation (I-CoDI)

Goal 4 of the Connect 2030 Agenda mandates ITU to facilitate development of an enabling environment for ICT innovation and during WTDC-17, creating a culture of innovation within BDT was identified as a priority by Member States. This is further emphasized in WTDC-17 Objective 3 “Enabling Environment” through which Member States mandated BDT to strengthen the capacity of ITU membership to integrate telecommunication/ICT innovation in national development agendas, and to develop strategies to promote innovation initiatives including through public, private, and public-private partnerships. Member States have also identified innovation as a priority at the regional level, with WTDC-17 mandating regional initiatives related to innovation for the Africa, Americas, Arab States, CIS, and Europe regions.

The design phase of the International Centre of Digital Innovation (I-CoDI), with the support of the Telecommunication Regulatory Authority of the United Arab Emirates, was completed in December 2020. In the context of “enabling innovation to connect the world” and utilizing a one-ITU approach, I-CoDI will have the following objectives:

* To help Member States integrate telecommunication/ICT innovation into their national development agendas;
* To develop the capacity within ITU/BDT to integrate innovation in their day-to-day activities.

The piloting phase for I-CoDI began in January 2021, with the aim to further validate the hypotheses established in the Design Phase. Within ITU, an Internal Impact Challenge Bootcamp involving all three Bureaus of the ITU and the General Secretariat, was launched to explore innovative ways for ITU to better deliver its capacity development programmes. I-CoDI design thinking workshops were also conducted in ARB and AMS regions to help in the prioritization of Regional Initiatives as part of the Regional Preparatory Meetings process for WTDC. Work is continuing to explore how I-CoDI can further support innovation programs for the Member States in the ITU Regions.

**Other partnerships**

In 2021 ITU and UNHCR further strengthen the global partnership around *meaningful connectivity for refugees* in pursuit of enhanced digital cooperation in support of forcibly displaced, stateless people and their hosting communities, with impactful projects and initiatives in mind. In September 2021 ITU and UNHCR teams met to exchange, explore and set out the partnership roadmap around four areas under which specific joint opportunities have been identified: joint programmes/operations; research, advocacy and communication; data learning and capacity building, and coordination and partnerships.

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| **Assistance to LDCs, SIDS and LLDCs**The work of BDT, centred around coherent and focused workstreams, cuts across Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs) and takes into account the specific challenges and needs that these groups of countries face. Assistance was provided in all ITU regions and across all thematic priorities, including in the specific areas of regulation and policy, emergency telecommunications and disaster response, digital inclusion, cybersecurity, ICT infrastructure and spectrum management and also in the cross-cutting area of capacity building. From 2018 to September 2021, ITU has provided support to most LDCs, LLDCS and SIDS to ensure that they are able to benefit from the opportunities of ICTs. In addition to the compilation of ITU assistance to specific countries that has been captured throughout this report, the following examples highlight the support that ITU has provided to the LDCs, LLDCS and SIDS over the last four years:In the Africa region, ITU:* established computer incident response teams (CIRTS) and set up national security operation centres in Botswana, Zimbabwe and Malawi to support their national cybersecurity efforts;
* supported the establishment of the ICT Regulatory Authority in South Sudan and trained its first group of staff;
* built the capacity of participants from Lesotho, South Sudan, and Malawi on the design of national ICT statistics and household survey tools and instruments;
* build capacity of participants from Botswana, Burkina Faso, South Sudan, Eswatini, Ethiopia, Lesotho, Mali, Malawi, Niger, Rwanda, Zambia and Zimbabwe on conformance and interoperability of ICT networks and connectivity of equipment and devices.
* provided technical assistance to Uganda to finalize the Uganda Digital Vision document.
* supported South Sudan, Ethiopia, Uganda, Tanzania and Rwanda in the sharing of experiences and best practices on e-application development and lessons learnt to identify gaps from ideation to successful market entry.
* Helped to launch the successful pilot of two smart villages and the development of the blueprint for the Smart Villages Initiative in Niger;
* under the Horn of Africa Initiative, supported Ethiopia and Eritrea to exchange information on existing digital initiatives and identify approaches to the development of a whole-of-government digital government services platform (Govstack).

In the Americas region, ITU:* delivered assistance to Antigua and Barbuda, Barbados, Guyana and Saint Kitts and Nevis in the use of ICTs in emergency and disaster situations as well as emergency telecommunication assistance as a response to Hurricane Maria, a Category 5 hurricane that hit
* deployed emergency telecommunication equipment to Haiti as a response effort after the devastation caused by the August 2021 earthquake
* strengthened the regulatory framework for electronic waste in the Dominican Republic;
* held the *Accessible Americas: ICT for ALL* event in Cuba in 2021.
* assisted Surinam to define its national IXP Model.
* built capacity in Bolivia and Paraguay on Connectivity Guidelines and Best Practices.

In the Arab Region, ITU:* as part of its work on innovation, equipped incubator managers and other ecosystem stakeholders in Djibouti and Mauritania with the methodology and tools to support their growth and entrepreneurship’;
* delivered direct assistance on market analysis, tariff policies and cost modelling to Palestine and Comoros. A specific training was organized in each country in order to guarantee essential national skills for the staff of the national regulatory authorities.

In the Asia-Pacific region, ITU:* Assisted Papua New Guinea in the implementation of mobile applications and in two case studies on block chain and big data in Papua New Guinea
* In partnership with FAO, supported the development of the e-agriculture strategy in Mongolia
* Delivered specialized country assistances on CIRT assessments and skill building to Samoa, Tonga, and Vanuatu.

In the CIS region, ITU * assisted Kyrgyzstan in the establishment of a CIRT
* conducted as CyberDrill in Azerbaijan ITU;
* carried out a digital skills assessment for the telecom sector of Armenia to assess the current level of skills of telecommunication industry workers, and their digital skills development needs;
* ,in supporting digital inclusion and development of digital innovation ecosystems, developed an online course for teachers from rural schools in the Kyrgyz Republic.

In the Europe region, ITU provided technical assistance to Moldova to review its spectrum policy.A number of specific reports were produced to address the challenges and needs of LDCs, LLDCs and SIDS. In September 2021, ITU, together with the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), published the report on [*Connectivity in Least Developed Countries: Status report 2021*](https://www.itu.int/connectivity-for-ldcs). The report highlights that 75 per cent of people in the LDCs still do not use the Internet. It also points to major differences between LDCs. The persisting usage gap reveals that coverage and affordability are not the only barriers to Internet use in LDCs. A lack of awareness of what the Internet is and lacking digital skills remain a major challenge. ITU also published the study [*Economic impact of broadband in LDCs, LLDCs and SIDS*](https://www.itu.int/en/ITU-D/LDCs/Pages/Economic-impact-of-broadband-in-LDCs%2C-LLDCs-and-SIDS.aspx#:~:text=Mobile%20broadband%20appears%20to%20exert,cent%20increase%20for%20fixed%20broadband.), produced in cooperation with the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS). The study confirms that both fixed and mobile broadband have a positive impact in the most vulnerable countries. Another report, [*Small Island Developing States and ICTs - a midterm review of the Samoa pathway*](https://www.itu.int/en/ITU-D/LDCs/Pages/Publications/SIDS/ICTs.aspx), shows that SIDS have made progress in terms of the universality and affordability of their ICT networks since the Samoa conference. However, progress has been uneven and there is a major gap between best performing SIDS and the others. Another study, [*ICTs, LDCs and the SDGs: Achieving universal and affordable Internet in the least developed countries*](https://www.itu.int/en/ITU-D/LDCs/Pages/ICTs-for-SDGs-in-LDCs-Report.aspx)*,* highlights the opportunities that ICTs deliver to tackle development challenges in the most vulnerable countries in the world. It analyses ICT developments in the LDCs and tracks progress towards achievement of Sustainable Development Goal (SDG) Target 9.c, to "significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020". Its analysis is based on a new, three-dimensional framework, which classifies LDCs into three categories based on their overall performance across the areas of access, affordability and skills. This will help countries identify areas that are most pressing and where to direct policy and scarce financial and human resources. |

## 12. Study group work

A total of over 800 documents were received from ITU-D membership for the study cycle 2018-2021. These valuable documents were analysed in the context of the 14 Study Group Questions, culminating in [14 final output reports](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/Publications.aspx) (one per Question) and the Cost Modelling Guidelines. The reports were approved in the study group meetings, held from 15 to 26 March 2021. These meetings focused on concluding all discussions on future Questions for the 2022-2025 study cycle. The conclusions from the study group meetings were reported to TDAG (Documents TDAG-21/8 and TDAG-21/9). The new set of study Questions will be agreed at WTDC-21. To complement the final reports (available for free to the public in all official UN languages) , [14 mini videos](https://www.youtube.com/playlist?list=PLpoIPNlF8P2PTdyZ2pMP18ylsq6Kr-kfb) have been released for free use by all.

[Eight annual deliverables](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/OngoingWork.aspx) were approved during the annual meetings of ITU-D study groups and were further discussed through author interviews and promoted through *ITU News* blogs.

### Workshops/tutorials/webinars associated with ITU-D study groups

A list of events organized during the 2018-2021 study period and referred to in this report under their respective thematic priorities is available on the following [webpage](https://www.itu.int/en/ITU-D/Study-Groups/2018-2021/Pages/meetings/events_workshops.aspx). Outputs of these events not only served as a basis for the development of new annual deliverables and draft guidelines, but also contributed to the development of the final output reports on study Questions.

### Work towards WTDC-21

As part of the preparatory process, ITU-D study groups have started discussions on topics for WTDC-21, namely on the rules of procedure of the ITU Telecommunication the Development Sector (WTDC Resolution 1), future study Questions (WTDC Resolution 2), streamlining of WTDC resolutions and the WTDC Declaration. Preliminary views on these topics can be found in the liaison statement sent to the TDAG Working Group on Resolutions, Declaration and Thematic Priorities (TDAG-WG-RDTP), in Document [TDAG-WG-RDTP/8](https://www.itu.int/md/D18-TDAG27.RDTP-C-0008). Discussions on these four topics have been completed at ITU-D Study Groups level with a joint meeting organised specifically to consolidate discussions on future study Questions and on Resolution 2, on working methods for study groups. Elements where consensus has not been reached yet will be further addressed at the TDAG level.

Candidatures for ITU-D study group chairmen and vice-chairmen will be processed in line with Resolution 61 (Rev. Dubai, 2014) of WTDC, no later than two weeks before the opening of WTDC-21. ITU-D membership is requested to carry out consultations at country and regional levels, with the goal of reaching consensus on the candidates to put forward. A circular letter will be sent after WTDC-21 to call for candidates for rapporteur and vice-rapporteur positions.

### Final reports of Questions

The 14 final output reports and a guideline on Cost Modelling (Question 4/1) have been completed and were approved at the fourth (and last) annual meetings of ITU Study Groups[[1]](#footnote-2) held in March 2021. The approved reports are available for membership and are being formatted into ITU publications to be made available for free to everyone in all official languages of the UN. The findings and guidelines from these reports are already available for use by BDT and ITU in relevant events, trainings, projects and in country actions.

### Collaboration with regional work and thematic priorities

A number of ITU-D study group management team members have been active as experts working as resource persons (speakers) for ITU-D events (e.g. REDs, Accessible Europe and RDFs), as trainers for ITU projects (e.g. PRIDA), as peer reviewers for ITU-D toolkits (e.g. Digital Regulation Toolkit), and as authors of ITU-D publications (e.g. Last Mile Solution Guide). Collaboration with thematic priority teams to develop guidelines and hold webinars/workshops are ongoing. Alignment with thematic priorities and regional activities is well under way both internally, through the implementation of results-based management, and with membership, through the TDAG Working Group on WTDC Resolutions, Declaration and Thematic Priorities.

### Collaboration with other Sectors

Active collaboration is ongoing in the form of participation in study group sessions and events to exchange information and seek specific inputs between study groups. An inter-Sectoral mapping table, which maps common areas of work between the ITU-D and ITU-T study groups and between the ITU-R and ITU-T study groups is maintained and updated by the secretariat of the [Inter-Sectoral Coordination Group](https://www.itu.int/en/general-secretariat/Pages/ISCG/default.aspx) (ISCG) on issues of mutual interest in collaboration with the secretariats of study groups of all three ITU Sectors. For more information on the work of ITU-D Study Groups 1 and 2, please refer to documents [TDAG-2](https://www.itu.int/md/D18-TDAG25.2-C-0012/en)1/8 and [TDAG-2](https://www.itu.int/md/D18-TDAG25.2-C-0013/en)1/9.

## 13. Regional Development Forums

Regional Development Forums (RDFs) provide a unique opportunity for dialogue between regional offices and decision-makers of ITU Member States and Sector Members, regional and international organizations and other stakeholders in each one of the six ITU-D regions. These events involve stocktaking and discussions on where each region stands in terms of implementation of the Buenos Aires Action Plan, in general, and of the regional initiatives in particular. RDFs provide an opportunity to discuss the progress that has been made, ongoing work and plans for implementation, as well as cooperation and partnerships that will contribute to the implementation of the regional initiatives. RDFs encourage a participatory and inclusive process to meet the agreed development goals and allow for necessary adjustments in the approaches to meet them. For more information on the RDFs, visit the [RDF website link](https://www.itu.int/en/ITU-D/Pages/regional-development-forums.aspx).

## 14. Partnering for digital transformation

This document has highlighted that today's digital era needs strong collaboration based around cooperation, resource-sharing and win-win arrangements that benefit governments, industry and users. A more holistic whole-of-government approach, in which technology is viewed as a basic enabling service that benefits all, is fundamental.

BDT is increasing its efforts to forge win-win strategic partnerships that open doors for collaboration essential to improved outcomes, tangible results and impact. BDT continues to cultivate relationships with existing partners, identify and engage new partners, retain exiting and attract new ITU-D Sector Members with the aim of attracting resources to finance large-scale projects, including regional initiatives, to support an impactful implementation of Buenos Aires Action Plan at global, regional, and national levels. As a result, during 2021 (as of 30 September, 2021) 46 new partnership agreements have been signed for a total commitment of USD 11.6 million. This compares to 43 new partnership agreements for a signed amount of USD 15.2 million in 2020, and 30 new partnership agreements for a signed amount of USD  mil15.2 million in 2019. Information on these partnerships is reflected on the ITU-D webpage “[Join ITU-D](https://www.itu.int/en/ITU-D/MembersPartners/Pages/default.aspx)”.

For the remainder of 2021, BDT will continue to deliver on the Buenos Aires Action Plan through ITU-D thematic priorities to make a sustainable impact and advance digital transformation for all. Together BDT can continue to transform the digital era and drive the conversation towards inclusive digital transformation.

## 15. UN Collaboration

During 2020 and 2021 to date, ITU significantly enhanced its engagement with the UN Resident Coordinator (RC) network through the UN Development Coordination Office (UNDCO), coordinated by the BDT as part of the regional presence. ITU developed a phased approach to engagement with Resident Coordinators globally in collaboration with UNDCO. Under this approach, ITU has developed and agreed with UNDCO the ITU offerings focused by region; agreed and shared with all RCs a joint commitment (between ITU and UNDCO) for enhanced cooperation; and agreed on a list of focal countries for targeted engagement by ITU. Awareness within the RC system of ITU’s mandate and work is being raised through webinars with RCs in each region, and ITU already begun our engagement through Common Country Analysis (CCAs) and Country Frameworks in many of the focal countries.

ITU is increasingly engaging in the various UN level assessments, including the Quadrennial review, but perhaps more importantly BDT is using this as criteria for improved performance of the regional presence through internal monitoring and evaluation.

An internal Task Group coordinates this work to ensure that all of the various work streams and inputs are appropriately addressed. The work is coordinated by the BDT Liaison Officer to the ITU’s office in New York, which ensures robust coordination and engagement between BDT and the UN System. This approach has strengthened and will continue to enhance ITU’s ability to participate fully in the UN Development System globally and our continuing efforts to fully connect the web of the regional offices, with the UN system.

A number of specific engagements and collaboration activities within the UN System include:

**Collaboration with the UN Secretary General’s Special Envoy on Technology:** In June 2020, the UN Secretary-General released the new Roadmap for Digital Cooperation ([A/74/821](https://undocs.org/A/74/821)), which includes a set of recommended actions for the international community to help ensure all people are connected, respected, and protected in the digital era. It builds on recommendations made by the Secretary-General’s High-level Panel on Digital Cooperation[[2]](#footnote-3), and input, received through the eight Roundtable groups convened by the office of the UN Secretary-General, from Member States, the private sector, civil society, and the technical communities and other stakeholder groups.

ITU is collaborating with the office of the UN Secretary General, specifically the office of the UN Secretary-General’s Special Envoy on Technology in the implementation of the Roadmap on Digital Cooperation. ITU is co-leading two Roundtable groups, namely on Global Connectivity and Capacity Building, with UNICEF and UNDP, respectively, and participating in other Roundtable groups, including the ones on Digital Public Goods, Digital Inclusion, Artificial Intelligence, Digital Trust and Security, and Digital Cooperation Architecture.

As the co-Champion, ITU, has organized a series of virtual events and initiated activities in partnership with relevant UN agencies and bodies, to harness the potential of digital technologies while mitigating the harm that they may cause – such as webinar series on “Digital Cooperation during COVID19 and beyond”, Youth media campaign on “Connect, Respect, and Protect”, and High-Level Meeting on Digital Cooperation, during the General Assembly in September 2020.

In 2021, ITU continues to work closely with the constituents of the roundtables, including but not limited to the government of Kazakhstan, Niger, Rwanda, Netherlands, UAE, Saudi Arabia, Mexico, Canada, Singapore, European Union and European Commission; Industry members - Microsoft, Vodafone, Viasat; Other members – GSMA, ISOC, World Economic Forum, Web Foundation, as well as our sister UN agencies - like UNICEF, UNDP, UN Habitat, UN-OHRLLS, UNCTAD, UNHCR, UNITAR, World Bank - just to name of a few) more focusing on the key actions directly responding to the Roadmap’s call to ensure universal, affordable and meaningful connectivity as well as to provide coordinated and coherent support for digital capacity building and skills development.

Other global cooperation activities include:

* The [Broadband Commission for Sustainable Development](https://www.broadbandcommission.org/), led by ITU and UNESCO, with membership of six other UN entities established in 2010 with the aim of boosting the importance of broadband on the international policy agenda, and expanding broadband access in every country as key to accelerating progress towards national and international development targets;
* Innovation for digital transformation by ITU and UNIDO particularly on SDG 9: ITU collaborates on the Third Industrial Development Decade for Africa (IDDA III) led by UNIDO in partnership with ITU and other UN organizations and partners, including development of a joint roadmap and a IDDA III high-level event (25 Sep 2019, New York) and collaboration on the Mohammed bin Rashid Initiative (MBR) for Global Prosperity;
* Mobile Learning Week (MLW), organized by UNESCO in partnership with ITU and supported by other partners;
* ITU/World Bank: Joint Declaration to enhance cooperation for the advancement of the 2030 Agenda for Sustainable Development as well as concrete areas of collaboration such as digital financial service (e.g., FIGI), Regulatory Handbooks, the Regulatory Watch Initiative, The 2020 Digital Regulation Handbook, the Digital Regulation Online Platform and the ICT Regulation Toolkit;
* BDT was successful in enhancing its collaboration with other UN agencies resulting in joint resource mobilization and partnerships efforts. One positive outcome was a partnership forged with FAO, ILO, UNCDF, and UNDP, which resulted in an agreement with the European Commission (EC) for the financing of the project “Support to Rural Entrepreneurship, Investment and Trade in Papua New Guinea”;
* Steering committee member in collaboration with other UN Agencies on the Partnership on Measuring ICT for Development, which is an international, multi-stakeholder initiative that was launched in 2004 to improve the availability and quality of ICT data and indicators, particularly in developing countries.

**Regional Cooperation with the UN**

In the Americas, ITU works closely with other UN agencies in supporting Honduras and Paraguay. In response to COVID-19, the UN Country Team (UNCT) Honduras, in cooperation with ITU, worked on digital transformation to build back better and has included digital transformation as a strategic priority taking the [Roadmap for Digital Cooperation](https://www.un.org/en/content/digital-cooperation-roadmap/) ([and the knowledge gathered by ITU; e.g. the WSIS-SDG matrix](https://www.itu.int/net4/wsis/sdg/).) Since 2020, ITU contributes to building the new UN Sustainable Development Cooperation Framework (UNSDCF) and the Common Country Assessment (CCA) was concluded in January 2021. In August 2021, the UNCT signed with Honduras the new UNSCDF for the 2022-2026 period and reflects digital transformation as a key element of the framework.

In El Salvador, with the collaboration of the local UNICEF office, ITU is contributing to the development of the UN Sustainable Development Cooperation Framework (UNSCDF). The new framework, which highlights the importance of digital transformation was signed in September 2021. In Paraguay, ITU is working with the UNCT and UN Resident Coordinator to efficiently incorporate ICT into the 2020-2024 UNSCDF, in particular to provide meaningful connectivity and bridge the digital divide in the Chaco region.

ITU has also been invited to integrate the board of [Generación Única](https://www.unicef.org/argentina/generacion-unica) by UNICEF in Argentina and in the UNPRPD-DIS projects by UNCT Guatemala.

In Asia and the Pacific, ITU has been working closely with UNRCs as well as UN agencies. In Thailand, under the leadership of UNRC Thailand and in collaboration with UNICEF and UNESCO, ITU conducted a study to map unconnected schools as a response to the negative consequences of COVID-19. The report was an important starting point for the Ministry of Education to start connecting the unconnected schools. In the Pacific, ITU has been working closely with UNRCs and UN agencies to develop two UN SDG fund projects on Smart Islands. At the regional level, ITU has been co-leading with UNICEF and the UN coordination working group on digitization in the education sector. In PNG, ITU has been contributing to the implementation of an EU project on e-agriculture with FAO, UNDP and UNCDF, among others.

In Europe, ITU has established and is co-leading two coordination mechanisms, i.e. the Digital Transformation Group for Europe and Central Asia and the UN Brussels Task Force on Digitalization for SDGs. Additionally, a series of strategic collaborations with UN agencies have been strengthened, including with FAO, UNICEF, UN Women, UNDP. The ITU Europe Regional Office has also engaged with all UNCTs of the Europe region and is closely working with 8 country teams (Albania, Bosnia and Herzegovina, Georgia, Montenegro, Moldova, North Macedonia, Serbia, Ukraine). It is contributing to the CCA and UNSDCF and aiming at strengthened implementation of digital transformation related projects and initiatives.

In the CIS Region, ITU is part of Belarus and Kazakhstan UN Country Teams (UNCT) and recently joined UNCT in Uzbekistan. Regular contact is maintained with other UNCTs in the countries of the region to raise awareness about ITU’s global and regional activities and explore potential areas of partnership. In Belarus, ITU engaged in the development of the CCA and UNSDCF for 2021-2025, joined the UNSDCF 2021-2025 of Kazakhstan and is finalizing the process of officially joining the UNSDCF of Uzbekistan. A positive working communication is established with the UNCT Turkmenistan. In Russia, ITU cooperates with the UN Information Center and contributes to the UN Bulletin. In 2020, collaboration continued with the UNESCO Institute for Information Technology in Education. The Regional Office for CIS is part of the UN Digital Transformation Group for Europe and Central Asia, co-lead by ITU and UNECE.

Implementation activities of the [ITU Regional Office for Africa](https://www.itu.int/itu-d/sites/africa/) are part of the regional coordination and reporting at the UN level. The ITU Regional Office has been contributing to periodical meetings of the UN Regional coordination mechanisms and UN Regional Forums on Sustainable Development, highlighting the actions carried out under the Regional Initiatives for Africa. The ITU Regional Office for Africa has made advances in joining the UN Sustainable Development System, integrating ITU as a non-resident agency in many countries in the work of UN country teams in addition to physical presence in UNCTs in Ethiopia, Senegal, Cameroon and Zimbabwe. Collaboration with the regional representation of the United Nations Development Coordination Office (UNDCO) and through the seven African Opportunity and Issue-Based Coalitions (O/IBCs) has increased and gained momentum. ITU co-leads in Africa, together with WHO, UN-HABITAT and UNESCO O/IBC4 dedicated to ‘Leveraging new technologies and enabling digital transitions for inclusive growth and development‘, which has the potential to develop into an exemplary platform on the continent to support UNCT country teams in understanding how digital technologies can be leveraged in the programming and ultimately support countries’ digital transformation journeys.

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1. See final meeting reports [1/32](https://www.itu.int/md/D18-SG01-R-0032/en), [1/33](https://www.itu.int/md/D18-SG01-R-0033/en) and [2/32](https://www.itu.int/md/D18-SG02-R-0032/en) [↑](#footnote-ref-2)
2. [Secretary-General’s High-level Panel on Digital Cooperation](https://www.un.org/en/digital-cooperation-panel/) [↑](#footnote-ref-3)