**Annex 2: Detailed information on work towards the achievement of the regional initiatives for Asia-Pacific**

# Introduction

The work of the ITU-D Sector is governed by the work program decided by the respective World Telecommunication Development Conferences. The current action plan, the Buenos Aires Action Plan, which was agreed upon by the WTDC-17 in 2017, comprises of global priorities, regional initiatives, resolutions and recommendations, and study group questions. Resolution 17 (Rev. Buenos Aires, 2017 “Implementation of and cooperation on regionally approved regional initiatives at the national, regional, interregional and global levels”) stipulates that all necessary measures be taken for promoting and implementing these regionally approved initiatives at the national, regional, interregional, and global levels. The Asia-Pacific Regional Initiative (2018-2021) 11 specifies the objectives and key deliverables requested by the Members specific to the region.

This document outlines activities undertaken by ITU between 2018 and early 2021, as a direct response to the expected results of the ITU Regional Initiatives for the Asia-Pacific Region, which consists of 38 ITU Member countries. Activities presented in this document depict outcomes and generated impact per Regional Initiative. They are grouped in chronological order per topic. All activities carried out under the ITU Regional Initiatives for Asia-Pacific are directly linked to and coordinated within the corresponding BDT Thematic Priorities, strengthening ITU’s delivery and impact at the regional and national level. Simultaneously the document identified the contribution of activities to the work of the ITU Study Groups, as well as ITU’s contribution to the implementation of the WSIS Action Lines and Sustainable Development Goals.

Regional initiatives are intended to address specific telecommunication/ICT priority areas that require special action of the ITU at the regional level. Under each regional initiative, a set of activities, initiatives, partnerships, and projects have been developed to meet the region's needs. The ITU Regional Development Forums have been serving as coordination mechanisms facilitating implementation of the Regional Initiatives. The ITU Regional Initiatives for Asia-Pacific are as follows:

* Asia-Pacific Regional Initiative 1: Addressing special needs of least developed countries, small island developing states, including Pacific island countries, and landlocked developing countries
* Asia-Pacific Regional Initiative 2: Harnessing information and communication technologies to support the digital economy and an inclusive digital society
* Asia-Pacific Regional Initiative 3: Fostering development of infrastructure to enhance digital connectivity
* Asia-Pacific Regional Initiative 4: Enabling policy and regulatory environments
* Asia-Pacific Regional Initiative 5: Contributing to a secure and resilient environment

A supporting element for the implementation of ITU Regional Initiatives for Asia-Pacific are the ITU Centres of Excellence since they provide training opportunities and capacity building to stakeholders in the region.

# Regional Development Forums

The objective of the ITU Regional Development Forum (RDF) is to provide an opportunity for high-level dialogue between the BDT and decision-makers, governments, and regulators, of ITU Member States, Sector Members and Academia. The RDF serves as a privileged platform for assessing strategic orientations that may have an impact on BDT's regional work plan in between World Telecommunication Development Conferences (WTDCs).

Two Regional Development Forums have been organised over the period 2018-2020:

* [ITU Regional Development Forum for Asia-Pacific (RDF-ASP) 2018](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2018/rdf2018/home.aspx)
* [ITU Regional Development Forum for Asia-Pacific (RDF-ASP) 2020](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2020/RDF/default.aspx)

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| **Regional Initiative** | **Key BDT thematic priorities** | **ITU-D Study Questions** |
| ASP 1: Addressing special needs of SIDSs (including PICs), LDCs and LLDCs | Cross-cutting across multiple thematic priorities\* | A number of study questions contribute to this ASP RI |
| ASP 2: Digital economy and inclusive digital society | Digital Services and Applications, Capacity Development, Network and Digital Infrastructure, Digital Inclusion | [**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 7/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ07.1&stg=1); [**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); [**Question 2/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ02.2&stg=2); |
| ASP 3: Infrastructure to enhance digital connectivity | Network and Digital Infrastructure, Policy and Regulation, Capacity Development | [**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 2/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ02.1&stg=1); [**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); [**Question 5/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ05.1&stg=1); [**Question 4/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ04.2&stg=2); [**Question 7/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ07.2&stg=2) |
| ASP 4: Policy and regulation | Policy and Regulation, Capacity Development, Digital Innovation Ecosystem, | [**Question 2/1**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ02.1&stg=1); [**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); [**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); [**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) |
| ASP 5: Secure and resilient environment | Cybersecurity, Emergency Telecommunication, Environment | [**Question 3/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ03.2&stg=2); [**Question 5/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ05.2&stg=2); [**Question 6/2**](https://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG02-RGQ06.2&stg=2) |

\* BDT thematic priorities: Network and Digital Infrastructure, Policy and Regulation, Statistics and Big Data, Capacity Development, Digital Innovation Ecosystem, Digital Services and Applications, Digital Inclusion, Environment, Cybersecurity, Emergency Telecommunication.

The Regional Development Forum for Asia and the Pacific [(RDF-ASP) 2020](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2020/RDF/default.aspx)[[1]](#footnote-2), which was attended by over 200 participants, including representatives of 30 Members States, 13 Sector Members, 6 Academia Members, 10 regional organizations, and 23 UN specialized agencies, emphasized the importance of accelerating digital transformation holistically under these thematic priorities. The leadership dialogue addressed by top level decision makers called for leveraging ICTs to accelerate delivery of SDGs across different sectors and to leave no one behind in this journey. A special dialogue of UN Resident Coordinators (Indonesia, Thailand, Pakistan) reemphasized the need to build back better post COVID-19 and in doing so maximizing the use that digital technology across the sector in addressing existing divides. In addition to leadership dialogue, ICT to deliver SDGs as one UN, and BDT thematic priority sessions, the Forum also held special sessions on WTDC-17, Digital Pacific, role of Academia in digital development, and ICT for SMEs.

***Regional Initiatives for Asia-Pacific and UN System for Asia-Pacific***

Activities of the ITU Regional Office and Area Office in Asia-Pacific (RO-ASP) are being coordinated with the UN agencies and regional organizations. ITU co-leads the Inter Agency Working Group on ICTs, together with the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Asia-Pacific Telecommunity (APT). The relationship with the UN country teams is continually being strengthened. As part of UN country team (Thailand), the ITU worked with UN Resident Coordinators office, UNESCO and UNICEF to undertake a digital divide mapping study with focus on school education in Thailand.

RO-ASP is a member of Regional Operations Management Team which provides leadership and support for the implementation of a coordinated, efficient, and effective common operational support agenda at the regional level in Asia and the Pacific to UN Country Teams (UNCTs) and the regional UN Development System (UNDS).

RO-ASP is also part of inter-agency task force to develop Common Country Assessment (CCA) Mongolia. RO-ASP has provided support in assessment of future ICT development and opportunities for Mongolia.

ITU is also closely working with UNRCO in Indonesia and the Digital Transformation Center established in Indonesia is playing its role in bridging the digital divide.

Based on the reports of ICT connectivity mapping for Pakistan and Afghanistan, an information session was conducted for UNRCOs Afghanistan and Pakistan in February 2021. A meeting to brief UNRCs in Asia-Pacific region was also conducted (9 February 2021) in collaboration with UNDCO.

During the period, ITU continued to work with UN sister agencies including UNESCAP (Terrestrial Map, Girls in ICT), FAO (digital agriculture, Girls in ICT), WHO (digital health), UNICEF (Child Online Protection, School Connectivity and GIGA), UNESCO (Digital Kids Asia-Pacific, School Connectivity, Girls in ICT), WFP (Emergency Telecom), UNU (e-Waste), ILO (e-Waste), UNEP (e-Waste) and the World Bank (China). The ITU is also part of a European Union funded project in Papua New Guinea together with FAO, ILO, UNCDF and UNDP. In addition, the Telecommunication Development Bureau continued to work closely with the Standardization and Radiocommunication Bureau in implementing these activities. The ITU Centres of Excellence in the region continued to play an important role in building skills.

In addition to UN agencies, ITU has also worked closely during the period with regional and sub-regional organizations including the APT, ABU, ADB, AIBD, APNIC, ASEAN, PITA amongst others.

# ITU Regional Initiatives for Asia-Pacific 2018-2020

The following presents the activities carried out during the period of 2018-2020 and the impact in achieving the expected results set out in the regional initiatives.

## ASP1: Addressing special needs of least developed countries, small island developing states, including Pacific island countries, and landlocked developing countries

Objective: To provide special assistance to least developed countries (LDCs), small island developing states (SIDS), including Pacific island countries, and landlocked developing countries (LLDCs) in order to meet their priority telecommunication/information and communication technology (ICT) requirements

Expected results:

1. Development of policy and regulatory frameworks for broadband infrastructure, ICT applications and cybersecurity, taking into account the special needs of LDCs, SIDS and LLDCs, and strengthening of human capacity to address future policy and regulatory challenges.

2. Promotion of universal access to telecommunications/ICTs in LDCs, SIDS, and LLDCs.

3. Assistance to LDCs, SIDS and LLDCs in adopting telecommunication/ICT applications in disaster management, relating to disaster prediction, preparedness, adaptation, monitoring, mitigation, response, rehabilitation and recovery of telecommunication/ICT networks based on their priority needs.

4. Assistance to LDCs, SIDS and LLDCs in their efforts to achieve internationally agreed goals, such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction, the Istanbul Programme of Action for LDCs, the Samoa Pathway for SIDS and the Vienna Programme of Action for LLDCs.

**IMPACT:**

Nine Pacific Islands countries were supported in improving connectivity through a satellite connectivity project (2014-2020) aimed at delivering e-service (health, education, finance) experiences to communities and enhancing resilience to disaster (e.g., Cyclone Harold 2020). ITU supported Afghanistan (broadband connectivity options and spectrum management), Fiji (spectrum management), Tonga (spectrum management), Solomon Islands (spectrum management), Mongolia (spectrum management, IPv6), Vanuatu (broadcasting master plan, spectrum management) and Samoa (Internet Exchange Point) improved digital infrastructure planning capability in respective areas. Five countries (Afghanistan, Papua New Guinea, Samoa, Solomon Islands, Vanuatu) strengthened their planning capacity during disaster while timely emergency telecommunications support was provided to Papua New Guinea, Solomon Islands and Vanuatu when disaster struck. In addition, ITU supported countries in improving their cybersecurity preparedness and response through assistances in areas of national cybersecurity strategy (Fiji, Kiribati, Solomon Islands) and CIRTs (Samoa, Papua New Guinea, Vanuatu, Tonga). Enabling environment for ICT and other cross-sectoral digital services were strengthened at national level through policy, legislation and strategy development assistances in Afghanistan, Cambodia, Mongolia, Nepal, Papua New Guinea, Solomon Islands, and Vanuatu. The USO 2.0 approach and COP: Partnering with Industry frameworks were developed in cooperation with ITU and endorsed by ASEAN Ministers. They are expected to accelerate the development of the digital economy particularly for LDCs within this region through better connectivity and access. ITU improved digital skills amongst its Members through training in mobile planning, traffic engineering, security, blockchain, Computer Incident Response Teams (CIRTs), and cybersecurity targeted at SIDSs, LDCs and LLDCs. Specialized sub-regional discussions focused on the unique situation in the Pacific Islands built greater awareness on e-applications, digital skills, emergency telecommunications, ICT Statistics and Asia-Pacific Information Society.

*Expected result: Development of policy and regulatory frameworks for broadband infrastructure, ICT applications and cybersecurity, taking into account the special needs of LDCs, SIDS and LLDCs, and strengthening of human capacity to address future policy and regulatory challenges.*

Direct country assistance (some assistances are ongoing) was provided to:

* Afghanistan, (digital agriculture), Cambodia (digital agriculture), Mongolia (digital agriculture), Papua New Guinea (digital agriculture, digital government) and Vanuatu (digital government, smart islands) in strengthening their cross-sectoral digital services framework and the human capacity inter-alia;
* Mongolia enhanced its capacity to address regulatory issues in digital applications environment;
* Nepal enhanced its ICT planning capability;
* Fiji, Kiribati and Solomon Islands received support on their national cybersecurity strategy;
* Papua New Guinea, Samoa, Tonga and Vanuatu in strengthening their CIRT capacity (ITU-DITRDC project);
* Afghanistan (broadband connectivity options and spectrum management), Fiji (spectrum management), Tonga (spectrum management), Solomon Islands (spectrum management), Mongolia (spectrum management, IPv6), Vanuatu (broadcasting master plan, spectrum management) and Samoa (Internet Exchange Point) for improving digital infrastructure planning;
* The ITU-PITA workshop on Digital Skills for the Pacific, (Nadi, Fiji, 21-23 November 2018), which was supported by DITRDC (Australia), built capacity of 17 participants in the area of digital skills gap analysis and training needs.

In implementing these activities, ITU also worked with partners including DITRDC (Australia), FAO, MSIP (Korea), APNIC.

Promotion of universal access to telecommunications/ICTs in LDCs, SIDS, and LLDCs was carried out through a combination of regional and national activities.

The activities include:

* The USO 2.0 approach framework, developed in cooperation with ITU, was endorsed by ASEAN Ministers and is expected to accelerate the development of the digital economy particularly for LDCs within this region through better connectivity and access.
* Nine Pacific Islands countries were supported in improving connectivity through a satellite connectivity project in partnership with International Telecommunications Satellite Organization (ITSO) and KACIFIC. 18 C band equipment was provided (2014-15), followed by 35 Ku band equipment (2018-19) and 40 Ka band equipment (2020) as part of the project. A number of participating countries from the Pacific have developed plans to continue with these services and some of this connectivity capacity was utilised to provide multiple services (health, education, finance, and for disaster management). An assessment of the project has been undertaken, which has re-emphasized the importance of digital connectivity.
* ITU and the Pacific Islands Telecommunications Association (PITA) carried out a study on [**Maximising Availability of International Connectivity in the Pacific**](https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Infrastructure_portal/Maximising-availability-of-int-connectivity-in-the-pacific.pdf),with support from the Department of Infrastructure, Transport, Regional Development and Communications (DTRDC) Australia. The study is currently being updated.
* The ITU-APT-PITA Workshop on “[Enabling policies and regulations for catalyzing e-application in the Pacific](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2018/appPacific2018.aspx) (30 November 2018 at Apia, Samoa), was organized back-to-back with the 11th APT Policy and Regulation Forum for Pacific ([PRFP-11](https://www.apt.int/2018-PRFP-11)), and discussed the enabling policies and regulatory framework for catalyzing e-application in the Pacific, with a focus on practical cases of e-application.
* ITU‐PITA training on “Traffic engineering and advanced wireless network planning”   
  (17-19 October 2018) was held, attended by 37 participants from 10 countries and expert support was provided by ITU to PITA Strategy Forum (2018 and 2019).
* ITU-PITA training on mobile planning and security (2019) built advanced level skills of 44 participants.

In implementing these activities, ITU also worked with partners such as DITRDC (Australia), ASEAN, PITA, APT, UNESCAP, ITSO, KACIFIC.

Expected result: Assistance to LDCs, SIDS and LLDCs in adopting telecommunication/ICT applications in disaster management, relating to disaster prediction, preparedness, adaptation, monitoring, mitigation, response, rehabilitation, and recovery of telecommunication/ICT networks based on their priority needs.

The activities include:

* Direct country assistance to Afghanistan, Papua New Guinea, Samoa, Solomon Islands and Vanuatu in developing National Emergency Telecommunication Plans (ITU-DITRDC project) and building national capacity inter-alia. Some assistance is ongoing.
* Pacific Regional Emergency Telecommunications Cluster (ETC) workshop was organized in Suva, Fiji from 4 – 7 December 2018.
* Timely assistance was provided to Papua New Guinea, Solomon Islands (Oil spill), and Vanuatu (Cyclone Harold) when hit by disasters.

In implementing these activities, ITU also worked with partners such as DITRDC (Australia), WFP (ETC), KACIFIC.

Expected results: Assistance to LDCs, SIDS and LLDCs in their efforts to achieve internationally agreed goals, such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction, the Istanbul Programme of Action for LDCs, the Samoa Pathway for SIDS and the Vienna Programme of Action for LLDCs.

The activities in the expected results above also contribute to this expected result. In addition:

* The UNESCAP-ITU-PITA Asia-Pacific Information Superhighway (AP-IS) for achieving the Sustainable Development Goals in Pacific Islands Workshop was held in Nadi, Fiji from 19 to 23 November 2018, along with the workshop on ICT Statistics and ICT Development Indicators (IDI) that enhanced the capacity of members in the Asia-Pacific region on infrastructure as well as ICT statistics and measurements.

In implementing these activities, ITU also worked with partners such as T UNESCAP and PITA.

**ASP 2: Harnessing information and communication technologies to support the digital economy and an inclusive digital society**

Objective: To assist Member States in utilizing information and communication technologies (ICTs) to reap the benefits of the digital economy and in addressing the human and technical capacity challenges for bridging the digital divide

Expected results:

1. Planning and elaboration of national strategic frameworks on the digital economy as well as associated toolkits for selected ICT applications and services.

2. Establishment and annual updating of a repository of all work done within ITU relating to the digital economy since the World Telecommunication Development Conference (Dubai, 2014).

3. Development of policies, strategies, and guidelines for practical implementation, including for the Internet of Things (IoT) and smart cities.

4. Deployment of ICT/mobile applications to improve the delivery of value-added services in sectors such as health, education, agriculture, governance, energy, financial services and ecommerce.

5. Identification, collation and sharing of knowledge, best practices, and case studies on various telecommunication/ICT applications.

6. Development of cross-sectoral national digital skills programmes for inclusiveness, especially for women, youth, the elderly and persons with specific needs.

**IMPACT:**

ITU provided support on the development of national digital e-strategies in six countries (Afghanistan, Cambodia, Pakistan, Mongolia, Papua New Guinea, Vanuatu) and improved national capacity to develop cross-sectoral plans and strategies in digital government and digital agriculture. A national study on mapping the digital divide in the education sector enhanced knowledge sharing amongst education and ICT sector stakeholders in Thailand and provided new insights while a regional study on implementation of GIGA will pave the way to improve school connectivity in the region. Studies are also ongoing focused on cross-sectoral collaboration in the transport and energy sector. Following the *Smart Village blueprint* publication and upon assistance requests from countries, the program (including smart islands) has also been started in Asia-Pacific. More than 1100 participants were training in various aspects of IoTs and smart cities through sixteen trainings while 325 participants enhanced their knowledge and engagement on Smart Sustainable Cities and e-Government Forums. Joint FAO-ITU publications e-agriculture shared case studies on e-agriculture, while more than 500 participants enhanced their awareness on GIGA, EQUALS, and e-agriculture solutions through various information sessions. More than 1 100 participants developed digital skills through trainings and workshops. Three digital transformation centres in the region started their mission to build digital skills and literacy at national level and have trained more than 36 000 participants. A regional study on the status of digital innovation in Asia-Pacific is being undertaken while ITU continues to support countries improve their digital innovation capability. Collaboration amongst UN agencies and partners was significantly increased in delivering the activities.

Expected result: Planning and elaboration of national strategic frameworks on the digital economy as well as associated toolkits for selected ICT applications and services

In the Asia-Pacific region, the following activities were undertaken in this regard:

* ITU continued to assist members in developing their national strategic frameworks in areas of whole of government approach (Pakistan, Papua New Guinea, Vanuatu) and digital agriculture (Afghanistan, Cambodia, Pakistan, Mongolia). This sectoral assistance aims to accelerate digital transformation across sectors. The e-agriculture strategy for Mongolia was approved by the government.
* Cross-sectoral approaches were facilitated through partnerships (e.g., FAO, DITRDC, national government entities, Bill & Melinda Gates foundation).
* ITU’s Smart village blueprint, launched in 2020, is being customized for implementation through smart village / smart islands assistances to Vanuatu. Based on requests for assistances from interested Members (Fiji, Indonesia, Papua New Guinea), a program is being developed in the region.
* A regional study on the status of digital innovation in Asia-Pacific is being undertaken. ITU assisted the Philippines on its digital innovation profile while work is being undertaken for Indonesia and Vietnam.

In implementing these activities, ITU also worked with partners such as FAO, DITRDC, Bill & Melinda Gates Foundation.

Expected result: Establishment and annual updating of a repository of all work done within ITU relating to the digital economy since the World Telecommunication Development Conference (Dubai, 2014)

The ITU-D Digital Economy related work is currently available under various thematic websites such as [Policy and Regulation](https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/default.aspx) and [Digital services and applications](https://www.itu.int/en/ITU-D/ICT-Applications/Pages/default.aspx). A comprehensive repository on digital economy project is underway. More on ITU’s work in policy and regulation as well as innovation are detailed in the below section under the specific Thematic Priorities.

Expected result: Development of policies, strategies, and guidelines for practical implementation, including for the Internet of Things (IoT) and smart cities.

ITU-T has a number of resources on smart city planning and guidelines. In collaboration with TSB, a number of awareness raising, and capacity building activities have been undertaken in the Asia-Pacific region.

* Around 325 participants enhanced their knowledge and engagement on Smart Sustainable Cities and e-Government Forums (Brunei (50), Vietnam (285)). The forums focused on standards and KPIs for measuring smart city case studies, and designing sustainable smart buildings and cities, and ICT architecture, services, and applications for smart cities.
* More than 1 100 participants were trained in various aspects of IoTs and smart cities through sixteen trainings.

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| IoT Technologies and Applications for Smart Cities (29 October-2 November 2018, India) |
| IoT overview and applications (23 April-20 May 2018, Online) |
| IoT Applications and IoT Security Aspects (9-13 December 2019, India) |
| IoT: Technological Aspects and Implementation (16-27 December 2019, online) |
| Conformity and Interoperability relating to Smart City (18-21 September 2019, China) |
| ICT Application relating to Smart City (21-24 September 2019, India) |
| IOT Security Challenges and Solutions (26 August – 6 September 2019, online) |
| Building IOT Solutions for Energy and Water Resource Management (16-27 December 2019, online) |
| Smart Sustainable City driven by Data, Network and AI Technologies (15-18 July 2019, Republic of Korea) |
| Conformity and interoperability relating to Smart City (18-21 September 2019, China) |
| Digital Transformation: Enhancing IoT-Driven Accessibility (11-17 May 2020, online) |
| IoT Sensors and Network for Disaster Communication (20-31 July 2020, online) |
| ICT applications relating to smart cities and communities (21-24 September 2019, India) |
| IoT Advanced Applications: Smart City & Industry 4.0 (14-25 September 2020, online) |
| Developing Internet of Things Ecosystem (2-13 November 2020, online) |
| Digital Government & Smart City for Resilience (30 November-18 December 2020, online) |

* A regional feasibility study on GIGA implementation is being undertaken in Bhutan, Bangladesh, Mongolia, Pakistan, Papua New Guinea, and Vanuatu.
* In Thailand, a study has been undertaken by ITU in coordination with UN Resident Coordinators Office, UNESCO, and UNICEF to examine the state of the digital divide, which frames school education in Thailand and to identify key infrastructural factors affecting access to and adoption of e-learning and other digital technologies in school.

In implementing these activities, ITU worked with partners including UNICEF, UNESCO, Asia-Pacific Centres of Excellence, DITRDC, and WeGo.

Expected result: Deployment of ICT/mobile applications to improve the delivery of value-added services in sectors such as health, education, agriculture, governance, energy, financial services and ecommerce.

* Papua New Guinea was supported in the development of an ICT application for pigs traceability in Jiwaka province, and built digital skills in using ICT applications. The activities were supported by national (NICTA, DAL, Provincial government) and international partners (FAO, DITRDC).
* Following the development of an e-agriculture strategy and supporting activities, a large EU funded project ‘Support to Rural Entrepreneurship, Investment and Trade in Papua New Guinea (STREIT PNG)’ is being implemented by FAO, ITU, ILO, UNDP, UNCDF.
* Support of ICT application to improve government decision-making is planned for Bhutan (2021).

Expected result: Identification, collation and sharing of knowledge, best practices, and case studies on various telecommunication/ICT applications.

* ITU enhanced the awareness of 140 participants on the important issue of connecting every school by 2030 (ITU-UNICEF partnership on GIGA).
* ITU continued its collaboration with FAO to organize the bi-annual Digital Agriculture Solutions Forum in 2018 (China) and 2020 (Virtual), sharing knowledge and information with around 350 participants on e-agriculture solutions and identifying ways of scaling up implementations at national level.
* ITU also continued its collaboration with FAO on case study series publications titled “E‐agriculture in Action: Drones in Agriculture”, “E-agriculture in Action: Blockchain for Agriculture Opportunities and Challenges”, “E‐agriculture in Action: Big data in Agriculture” while “E‐agriculture in Action: Artificial Intelligence in Agriculture” is planned for release in 2021.
* ITU is currently implementing the national component of FIGI project (financed by Bill & Melinda Gates Foundation) with CAICT (China) aimed at enhancing financial inclusion in China through digital financial services.
* ITU leveraged the awareness on sharing knowledge and information in 2021 amongst 45 participants on EQUALS Global Partnership and identifying a feasible plan to support the digital skills programme to bridge the digital gender divide in Afghanistan.

Expected result: Development of cross-sectoral national digital skills programmes for inclusiveness, especially for women, youth, the elderly and persons with specific needs

* A regional training on the Use of Drones, Satellite Imagery and GIS for Agriculture was successfully held from 4 to 8 June 2018, at the Asian Institute of Technology, Thailand (36 participants), in partnership with FAO and GIC.
* Three training modules on Digital Financial Services and Digital Payment were developed for the Government of India though internal expertise in close collaboration between ITU-D and ITU-T. An online training was held from 1 to 15 October, 2018 that enhanced the capacity of 67 participants from India in the area of understanding digital payments.
* Following the release of ITU Guidelines on Child Online Protection, ITU partnered with MCMC and UNICEF to raise awareness of the guidelines amongst stakeholders in Malaysia. In 2020, the revised ITU Guidelines on Child Online Protection was launched and was incorporated in the Girls in ICT Day Thailand cybersecurity training program, in collaboration with Cisco Thailand, where more than 100 participants took part in the awareness training program.
* All the three Digital Transformation Centers in Asia-Pacific (BPPTIK- Indonesia, UNITECH - Papua New Guinea, and DICT- The Philippines) are operational. These centres have trained more than 36,000 participants.
* The ITU-PITA workshop on Digital Skills for the Pacific, (Nadi, Fiji, 21-23 November 2018), which was supported by DoCA, built capacity of 17 participants from the Asia-Pacific region (Australia, Cook Islands, Federated State of Micronesia, Fiji, Papua New Guinea, Tonga, Tuvalu) in the area of digital skills gap analysis and the training needs.
* In collaboration with the Telecommunications Regulatory Commission of Sri Lanka (TRCSL), ITU assisted in developing digital skills for job creation through the event “Modern Application Design & Development for Achieving SDGs” organized in Colombo, Sri Lanka, from 10 to 14 December, 2018. It was attended by 42 participants from a wide range of organizations representing Afghanistan, India, and Sri Lanka.
* Four training tracks on Leadership programme, Smart farming, Artificial Intelligence, and Cybersecurity in collaboration with APCICT/UNESCAP, FAO, UNESCO, APT, CISCO, DTAC, and CCDKM was delivered during the Girls in ICT Day Thailand digital skills training program in 2020 (17 August – 17 September) with more than 252 girls participating in the training program.

**ASP 3: Fostering development of infrastructure to enhance digital connectivity**

Objective: To assist Member States in the development of telecommunication/information and communication technology (ICT) infrastructure in order to facilitate provision of services and applications on that infrastructure.

Expected results:

1. Migration/transition of analogue networks to digital networks, application of affordable wired and wireless technologies (including interoperability of ICT infrastructure), and optimized use of the digital dividend

2. Maximized use of new and emerging technologies for the development of telecommunication/ICT networks, infrastructure and services including 5G and smart grid

3. Strengthening of capacity to develop and implement national broadband plans in order to provide broadband access to unserved and underserved areas (including support for study of the status of national broadband networks and international connectivity), to promote affordable access, especially for youth, women, indigenous peoples and children, to select appropriate technologies, to develop and use universal service funds effectively, and to develop financially and operationally sustainable business models

4. Promotion of Internet exchange points (IXPs) as a long-term solution to advance connectivity, deployment of IPv6-based networks and applications, and progress in the transition from IPv4 to IPv6

5. Strengthening of the capacity to implement conformance and interoperability (C&I) procedures and testing and to plan resources for C&I programmes, and facilitation of the establishment of common regional and subregional C&I regimes (including the adoption and implementation of mutual recognition arrangements)

6. Attention to spectrum-management issues, including radio-frequency planning, new spectrum sharing approaches, harmonized spectrum allocation and spectrum monitoring systems, and support for preparations for world radiocommunication conferences (WRCs) and implementation of their outcomes

7. Building of skills for the development and telecommunications use of satellite

8. Strengthening of cooperation with international/regional organizations to enhance regional ICT connectivity, such as the Asia-Pacific Information Superhighway (AP-IS).

**IMPA CT**

ITU's interactive terrestrial transmission maps for the Asia-Pacific region (over 1 million kilometres of network data in place) and a specific sub-regional (Maximizing availability of international connectivity in the Pacific) and national study (Pakistan) on international connectivity continue to provide updated connectivity status to membership. More than 1400 participants were trained through around 30 trainings in emerging technologies (such as 5G, IOT, Blockchain, broadband, artificial intelligence), standardization, conformity & interoperability and IPv6. USO 2.0 approach, developed in cooperation with ITU, was endorsed by ASEAN Ministers and is expected to accelerate the development of the digital economy particularly for LDCs within this region through better connectivity and access. Eight countries (Mongolia, Lao PDR, Brunei Darussalam, Solomon Islands, Vietnam, Vanuatu, Fiji, Tonga) enhanced their spectrum management capability through customized country assistances, while more than 2800 participants raised their awareness and skills on spectrum issues through regional and national activities.

Expected result: Migration/transition of analogue networks to digital networks, application of affordable wired and wireless technologies (including interoperability of ICT infrastructure), and optimized use of the digital dividend

* ITU is assisting the regulator in Vanuatu in developing their broadcasting master plan aimed at strengthening the institution and the sector.
* An assessment of ICT network connectivity is also being undertaken in Pakistan (with the UN Resident Coordinator Office).

Expected result: Maximized use of new and emerging technologies for the development of telecommunication/ICT networks, infrastructure and services including 5G and smart grid

* ITU continues to update the ITU interactive terrestrial transmission maps for Asia-Pacific region (over 1 million kilometres of network data in place) with the latest information on national and international backbones, mobile connectivity, Internet Exchange Points, and other infrastructure details.
* The study on maximizing availability of international connectivity in the Pacific (2018), was developed in partnership with Pacific Islands Telecommunications Association (PITA) and with support from DITRDC, is also being updated.
* In addition, 5G was also part of other capacity building events such as mobile planning and security amongst others. ITU also continued trainings on new technologies such as artificial intelligence and blockchain.
* An information session on Distributed Ledger Technology (including Blockchain), was organized in partnership with IBM, raised the awareness of countries ion blockchain governance, applying this emerging technology and learning about the work done by the ITU.
* APT and ITU continued their collaboration in building skills of international affairs staff of Asia-Pacific Members in the area of international conferences. This year’s training, which focused on the WTSA, trained 32 participants.
* ITU continues to participate in meetings and seminars organized to support AP-IS.
* Emerging technologies remains a key area, which requires skills development. More than 1 000 participants-built skills through training activities on emerging technologies.

|  |
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| Mobile Broadband QoS (1-5 May 2018, India) |
| Blockchain Ecosystem and Decentralization (3-6 September 2018, Thailand) |
| Advanced wireless and traffic engineering for the Pacific (17-19 October 2018, Fiji) |
| IoT Planning (25-28 September 2018, Indonesia). |
| IoT Technologies and Applications for Smart Cities (29 October-2 November 2018, India) |
| IoT Planning (12-15 Nov 2018, Cyberjaya, Malaysia) |
| IoT platform and application development in Thailand (6-9 November 2018, Thailand) |
| IoT overview and applications (23 April-20 May 2018, Online) |
| Traffic engineering and advanced wireless network planning (30 September–3 October 2019, Thailand) |
| Artificial Intelligence Overview and Applications (16-19 September 2019, Thailand) |
| LTE, LTE Advanced and Road towards 5G (2018, Myanmar) |
| Evolution and emerging trend of broadband access technologies (20-25 May 2019, India) |
| Broadband Network Security: Challenges & Solutions (26-30 August 2019, India) |
| Next Generation Broadband Network: Design, implementation, and applications (25 November-20 December 2019, online) |
| 5G and ICT Applications (17 June-10 July 2019, Online) |
| Fifth Generation (5G) Technology: State-of-the-Art, Opportunities and Challenges (15-17 October 2019, Malaysia) |
| Advanced Broadband Network QoS and Applications (24 August-4 September 2020, Online) |
| Fifth Generation (5G) Radio Access Network Planning and Coexistence (14-28 September 2020, online) |
| Digital infrastructure planning (12-23 October 2020, online) |
| 5G Technology and Applications in practice (12-31 October 2020, online) |
| Information session on Distributed Ledger Technology (including Blockchain) (2020, online) |

Expected result: Strengthening of capacity to develop and implement national broadband plans in order to provide broadband access to unserved and underserved areas (including support for study of the status of national broadband networks and international connectivity), to promote affordable access, especially for youth, women, indigenous peoples and children, to select appropriate technologies, to develop and use universal service funds effectively, and to develop financially and operationally sustainable business models

* The USO 2.0 approach, developed in cooperation with ITU, was endorsed by ASEAN Ministers and is expected to accelerate the development of the digital economy particularly for LDCs within this region through better connectivity and access.
* The ITU-USF (Pakistan) Workshop on Internet Access and Adoption enhanced the knowledge of 50 participants from Bangladesh, Bhutan, China, Indonesia, Malaysia, Nepal, Pakistan, and Sri Lanka, on technologies, and regulatory and policy issues for implementing projects in rural remote areas with the objective to bridge digital divide. It shared best practices and universal service strategies amongst those 8 countries on digital transformation leveraging on cross sectoral collaboration; reviewed the development, implementation and strategies, policies, and legal and regulatory frameworks for the ‘next-generation universal service obligations’ (USO 2.0) and enhanced collaboration on use of innovative solutions that could be used to form policy or develop models for dissemination in the region.

Expected result: Promotion of Internet exchange points (IXPs) as a long-term solution to advance connectivity, deployment of IPv6-based networks and applications, and progress in the transition from IPv4 to IPv6

* Brunei Darussalam was assisted on IPv6 through (i) building capacity and awareness of 30 participants from government, regulators, industry and academia during a three-day national training on “IPv6 deployment and IPv6 Security”, organized by ITU, APNIC and the Authority for Info-communications Technology Industry of Brunei Darussalam (AITI) (13‐15 August 2018) and ii) providing customized engineering assistance and recommendations to Progresif (mobile primarily) and Telbru (fixed operator) on the possible ways to deploy.
* Mongolia was assisted on IPv6 through i) building capacity and awareness of more than 50 participants from government, regulators, industry, and academia through a three-day national training on “IPv6 deployment and IPv6 Security”, organized by ITU, APNIC and CRC (22‐24 October 2018) and (ii) holding stakeholder meetings on the development of a national IPv6 roadmap (developed through consultation.
* Assistance is being provided to Samoa (2020-21) and Mongolia (2021) on Internet Exchange Points.
* These activities have been supported through ITU-DITRDC projects and in cooperation with APNIC.
* A regional training on Internet and IPv6 Infrastructure Security (14-18 May 2018, Thailand, 34 participants) was organized as part of the Centres of Excellence training with support from MDES (Thailand) and APNIC.

Expected result: Strengthening of the capacity to implement conformance and interoperability (C&I) procedures and testing and to plan resources for C&I programmes, and facilitation of the establishment of common regional and subregional C&I regimes (including the adoption and implementation of mutual recognition arrangements)

ITU built skills of more than 170 participants in the area of conformity and interoperability through the ITU Asia-Pacific CoE in 2018-2020, in partnership with the ITU Asia-Pacific CoE on conformity and interoperability (CAICT).

Expected result: Attention to spectrum-management issues, including radio-frequency planning, new spectrum sharing approaches, harmonized spectrum allocation and spectrum monitoring systems, and support for preparations for world radiocommunication conferences (WRCs) and implementation of their outcomes.

* ITU provided dedicated support on improving the spectrum management framework for Brunei Darussalam (IMT 2020), Solomon Islands (type approval for short range device), Fiji (National Frequency Allocation Strategy), Tonga (National Frequency Allocation Table), Mongolia (spectrum pricing), Vanuatu (Radio licensing regime) and Vietnam (Amendment of national law on frequencies).
* Dedicated training was conducted to Lao PDR (automation of national spectrum management.
* 4th Annual Asia-Pacific Spectrum Management Conference on Supporting ITU Asia-Pacific Regional Initiative on Spectrum Management was held in Bangkok, Thailand, from 17 to 19 July 2018, in collaboration with Forum Global and Ministry of Science, ICT and Future Planning, Republic of Korea.
* The Pacific Radiocommunication Workshops were held from 4 to 6 September 2018, in Solomon Islands and 11-12 April 2019 in Fiji.
* Regional Forums on spectrum management (ASMC-2019, ASMC-2020) have raised awareness amongst more than 1 600 participants on WRC-19, spectrum management practices and emerging issues. R Regional Radio Seminar for Asia and the Pacific was held from 19-30 October 2020. These activities were carried out in cooperation with the Radiocommunication Bureau, Regional Organization (APT) and other partners (Forum Global, PITA).

Expected result: Building of skills for the development and telecommunications use of satellite

* The Pacific Satellite Connectivity and Development of Emergency Telecom’ project (2014-2020) supported nine countries in the Pacific region (Federated States of Micronesia, Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu) with satellite connectivity. The project was signed in 2014 with partners including ITSO, Intelsat, Inmarsat and Kacific. These connectivity capacities have enabled e-applications in schools, communities and healthcare while serving as the key point of contact when Cyclone Harold struck Vanuatu in April 2020.
* An impact assessment study has been undertaken on the above project impact, which has validated the demand for such services and importance of satellite connectivity in remote areas and the importance of digital infrastructure for resilience and for delivering e-applications in the Pacific.

# Expected result: Strengthening of cooperation with international/regional organizations to enhance regional ICT connectivity, such as the Asia-Pacific Information Superhighway (AP-IS).

* To realize this expected result, ITU has been expanding and strengthening partnerships and collaboration with international and regional organizations during this reporting period.
* The ITU-ADB Joint webinar on ‘Advances in Closing the Connectivity Gap in Asia-Pacific: Better Analysis, Understanding and Solutions’ was organized in September 2020 and raised awareness on the digital divide in the region and emerging solutions on the horizon.

**ASP 4: Enabling policy and regulatory environments**

Objective: To assist Member States in developing appropriate policy and regulatory frameworks, fostering innovation, enhancing skills, increasing information sharing and strengthening regulatory cooperation, thereby contributing to a supportive regulatory environment for all stakeholders.

Expected results:

1. Sharing of information on developments in policy, legal and regulatory frameworks as well as market developments in the information and communication technology (ICT) sector and the digital economies it enables.

2. Development, implementation and review of strategies, policies, and legal and regulatory frameworks, including for next-generation universal service obligation (USO), consumer protection, transformation of small and medium-sized enterprises (SMEs) to digital enterprises, and innovation and entrepreneurship.

3. Encouraging inclusive dialogues and strengthening cooperation among national and regional regulators, policy-makers and other telecommunication/ICT stakeholders, as well as with other sectors of the economy, on topical policy, legal, regulatory and market issues.

4. Strengthening institutional, human, and technical capacity on topical policy, legal and regulatory issues, as well as on economic and financial issues and market developments.

5. Improved awareness of policy and regulatory frameworks relating to data privacy and cross border data.

6. Development of strategic frameworks to support research and development activities in ICT in developing countries.

**IMPACT:**

Enhanced inclusive dialogue amongst regulators and policy makers through established platforms (Asia-Pacific Regulators Roundtable, ITU-MIIT Seminar, Regional Development Forums) on priority issues within the ICT sector. In addition, cross-sectoral cooperation was strengthened through e-strategy initiatives across governance, health, education, finance (ASP RI 2). More than 900 participants strengthened their awareness and capacity in policy and regulatory areas, including data protection, broadcasting, blockchain, universal access, big data, competition issues, ICT accessibility, regulatory enablers for digital transformation amongst others.

Expected result: Sharing of information on developments in policy, legal and regulatory frameworks as well as market developments in the information and communication technology (ICT) sector and the digital economies it enables.

Enabling policy and regulatory environment are key for resilient and secure digital infrastructure and delivery of service delivery.

* The ITU-USF (Pakistan) Workshop on Internet Access and Adoption enhanced the knowledge of 50 participants from Bangladesh, Bhutan, China, Indonesia, Malaysia, Nepal, Pakistan, and Sri Lanka, on technologies, and regulatory and policy issues for implementing projects in rural remote areas with the objective to bridge digital divide. It shared best practices and universal service strategies amongst those 8 countries on digital transformation leveraging on cross sectoral collaboration; reviewed the development, implementation and strategies, policies, and legal and regulatory frameworks for the ‘next-generation universal service obligations’ (USO 2.0) and enhanced collaboration on use of innovative solutions that could be used to form policy or develop models for dissemination in the region.
* Additionally, Asia-Pacific regional studies were delivered on the impact of competition, liberalization, and taxation in the ICT sector; and
* Innovative Business Models in the Telecom Sector are currently being undertaken in response to the emerging issues emanating from the COVID-19 pandemics and demand for accelerated development infrastructure and networks.

Expected result: Development, implementation and review of strategies, policies, and legal and regulatory frameworks, including for next-generation universal service obligation (USO), consumer protection, transformation of small and medium-sized enterprises (SMEs) to digital enterprises, and innovation and entrepreneurship.

* Mongolia was provided assistance on enhancing their capacity to address regulatory issues in digital applications environment.
* Nepal was assisted in ICT strategic plan, which also built capacity of 30 staff for drafting the strategic plan of the National Telecommunications Authority (NTA).

A regional assessment on ICT accessibility for the Asia-Pacific region was undertaken to promote action and implementation of ICT accessibility and digital inclusion policies for vulnerable populations, including persons with disabilities for countries in Asia and the Pacific.

Expected result: Encouraging inclusive dialogues and strengthening cooperation among national and regional regulators, policy-makers and other telecommunication/ICT stakeholders, as well as with other sectors of the economy, on topical policy, legal, regulatory and market issues

* USO 2.0 Framework, which was developed in cooperation with ITU and was endorsed by ASEAN Ministers is expected to accelerate the development of the digital economy, particularly for LDCs within this region.
* ITU facilitated high level exchange of policy and regulatory experiences and dialogue through:
  + ITU-BTRC (2018 Bangladesh) Asia-Pacific Regulators Roundtable (60 participants)
  + ITU-NBTC (2019 Thailand) Regulators Roundtable (71 participants) and for a further 50 participants from 21 countries during the industry roundtable
  + ITU-MIIT (China) Seminar on Universal Service and ICT for Poverty Alleviation (150 participants)
* Cross-sectoral cooperation was strengthened through digital government (Refer ASP RI 2), digital agriculture (Refer ASP RI 2) and digital financial initiatives.
* ITU is currently implementing a digital finance project (FIGI) in China, funded by the Bill & Melinda Gates foundation in co-operation with CAICT and in coordination with the World Bank.

Expected result: Strengthening institutional, human and technical capacity on topical policy, legal and regulatory issues, as well as on economic and financial issues and market developments

ITU strengthened institutional and individual capacity of around 300 participants in policy and regulatory areas including broadcasting, competition, digital applications, regulatory enablers for digital transformation amongst others. Furthermore, the above-referenced studies and initiatives are expected to serve as a basis for strengthening institutional, human, and technical capacity.

# Expected result: Improved awareness of policy and regulatory frameworks relating to data privacy and cross-border data

Data protection and privacy is an area of emerging concern among member countries in Asia and the Pacific. Around 90 participants were trained in the area of data protection and privacy.

ITU continues to receive requests from countries to support in this area.

Expected result: Development of strategic frameworks to support research and development activities in ICT in developing countries

ITU and NBTC (Thailand) cooperated in building the skills of researchers in Thailand in the areas of IoT platform and application development (2018) and Distributed Ledger Technologies (2019).

ITU endeavours to continue with its members in supporting research in the region. One recent example towards this expected result was the collaboration established with the United Nations University and ITU Academia members for the organization of a dedicated session during the RDF 2020. The collaboration is intended to strengthen the linkage between research and policy making and inviting ITU Academia members to conduct research for policy impact and address challenges and opportunities that regulators and ICT ministries are facing in the region

**ASP 5: Contributing to a secure and resilient environment**

Objective: To assist Member States to develop and maintain secure, trusted, and resilient networks and services, and to address challenges related to climate change and disaster management.

Expected results:

1. Compilation of national and/or regional cybersecurity strategies,

2. Establishment of national cybersecurity capabilities such as computer incident response teams (CIRTs), and sharing of good practices, through the Global Cybersecurity Index (GCI), to nurture a culture of cybersecurity

3. Strengthening of institutional cooperation and coordination among the key actors and stakeholders at the national, regional, and global level (including through organizing cyberdrills) and of the capacity to address issues related to cybersecurity

4. Development of national emergency telecommunication plans and ICT-based initiatives for providing medical (e-health) and humanitarian assistance in disasters and emergencies

5. Incorporation of disaster-resilient features in telecommunication networks and infrastructure, and development of ICT-based solutions (including wireless and satellite-based technologies) to enhance network resilience

6. Development of standards-based monitoring and early-warning systems linked to national and regional networks, and enhanced use of active and passive space-based sensing systems for disaster prediction, detection, and mitigation

7. Formulation of comprehensive strategies and measures to help mitigate and respond to the devastating effects of climate change, including e-waste policy.

**IMPACT:** Countries improved their cybersecurity capacity through ITU assistances on cybersecurity strategy development (3 countries), CIRTs (4 countries) and child online protection. Enhanced awareness was built in member countries through the creation of a repository of national cybersecurity strategies, while more than 1500 participants raised their awareness through workshops and trainings. ASEAN Ministers endorsed the COP Guidelines – Partnering with industry developed in cooperation with ITU.

Five countries (Afghanistan, Papua New Guinea, Samoa, Solomon Islands, Vanuatu) strengthened their planning capacity during disasters while timely emergency telecommunications support was provided to Papua New Guinea, Solomon Islands and Vanuatu, when disaster struck. More than 170 participants raised their skills in emergency telecommunication. In addition, a study on GIS-based assistance for multi-disaster decision making is being undertaken in light of COVID-19.

E-Waste is another important area of focus for the region. ITU built awareness of around 60 participants from India to enhance their understanding on E-Waste policies and management.

Expected result: Compilation of national and/or regional cybersecurity strategies

* A repository of national cybersecurity strategies was compiled and is currently available on the ITU website.

Expected result: Establishment of national cybersecurity capabilities such as computer incident response teams (CIRTs), and sharing of good practices, through the Global Cybersecurity Index (GCI), to nurture a culture of cybersecurity

* Specialized country assistances on CIRT assessments and skill building inter-alia were provided to Samoa, Vanuatu, PNG, and Tonga through a DITRDC supported project.
* Capacity building was also carried out together with partners such as APNIC.
* ITU undertook the Viet Nam National Cybersecurity Education Capacity Assessment

Expected result: Strengthening of institutional cooperation and coordination among the key actors and stakeholders at the national, regional and global level (including through organizing cyberdrills) and of the capacity to address issues related to cybersecurity

* ITU supported Bhutan, Kiribati, and Solomon Islands to strengthen their cybersecurity strategy frameworks. ITU is also supporting Fiji in review of Cybersecurity strategy.
* A Regional National Cybersecurity Strategy Table Top exercise was carried out focusing on Pacific Islands countries, in Melbourne, Australia.
* During 2018-20, more than 1500 participants raised their awareness and skills on Safeguarding Critical National Infrastructure (CNI), Critical information protection and Cyberdrills and other security related issues.
* ITU and the Department of Communications and the Arts (DoCA) implemented a project on Capacity Building for Countering Misappropriation of Telephone Numbers in Pacific Island Countries, with various partners.
* In February 2020, ITU-UNICEF-UNODC as co-conveners along with the Philippines Department of Social Welfare and Development (DSWD) and the Thailand Ministry of Social Development and Human Security (MSDHS) as the focal points for the ASEAN Ministerial Meeting on Social Welfare and Development, organized the ASEAN Regional Conference on Child Online Protection on 25-27 February 2020 in Bangkok, Thailand. Over 200 delegates from ASEAN countries participated in this event.

Expected result: Development of national emergency telecommunication plans and ICT-based initiatives for providing medical (e-health) and humanitarian assistance in disasters and emergencies

The region remains vulnerable to natural hazards and an emergency telecommunication plan is critical:

* Direct country assistance was provided to Papua New Guinea, Samoa, Tonga and Vanuatu in developing National Emergency Telecommunication Plans (ITU-DITRDC project) and building national capacity inter-alia;
* A Pacific Regional Emergency Telecommunications Cluster (ETC) workshop was organized in Suva, Fiji from 4 – 7 December 2018.
* Timely assistance was provided to Papua New Guinea, Solomon Islands (Oil spill), and Vanuatu (Cyclone Harold) when disasters hit.

Expected result: Incorporation of disaster-resilient features in telecommunication networks and infrastructure, and development of ICT-based solutions (including wireless and satellite-based technologies) to enhance network resilience

Expected result: Development of standards-based monitoring and early-warning systems linked to national and regional networks, and enhanced use of active and passive space-based sensing systems for disaster prediction, detection, and mitigation,

In order to realise these two expected results:

* GIS-based assistance for multi-disaster decision making is currently being carried out in India. It is expected that this study, which takes into account the additional challenges of COVID-19 lockdown, will identify how local administrations are addressing multiple crisis, natural and health emergencies, at the same time, using a decision-support tools, such as GIS.
* ITU also advocated for the use of standard based emergency telecom systems (the Common Alerting Protocol, CAP) during its advisory on National Emergency Telecommunication Plan support to the Pacific Islands countries

Expected result: Formulation of comprehensive strategies and measures to help mitigate and respond to the devastating effects of climate change, including e-waste policy

E-Waste is another important area of focus for the region:

* ITU, in partnership with UNU, ILO and UNEP, built awareness of around 60 participants from India to enhance their understanding on E-Waste policies and management. This is an area of increasing importance to the region.
* ITU will step up the efforts to address the challenges associated with climate change, and E-Waste

**ITU Centres of Excellence 2018-2021**

Within the framework of the ITU Centres of Excellence project, a network of six ITU Centres of Excellence located in China, India, Islamic Republic of Iran, Malaysia, and the Republic of Korea, provide a series of training opportunities. Annually, around 20 training opportunities are provided to build their human capacity in priority areas.

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| Name of institution | Country | Priority areas |
| Advanced Level Telecom Training Centre (ALTTC) | India | Wireless and Fixed Broadband  Internet of Things  Cybersecurity |
| China Academy of Information and Communications Technology (CAICT) | China | Conformance & Interoperability  ICT Applications |
| IoT Academy | Iran | Internet of Things |
| National Information Society Agency (NIA) | Republic of Korea | ICT Applications |
| State Radio Monitoring Center / StateRadio Spectrum Management Center (SRMC) | China | Spectrum Management |
| Wireless Communication Centre, Universiti Teknologi Malaysia (UTM) | Malaysia | Wireless and Fixed Broadband |

This is an important offering and an integral component of the implementation of the ITU Regional Initiatives for Asia-Pacific. Overall, during the period of 2018-2020, around 50 training opportunities were offered through the Asia-Pacific network of the ITU Centres of Excellence. More than 4000 participants enhanced their skills. Strategic guidance to the Asia-Pacific network of the ITU Centres of Excellence is provided through regular meetings of the Steering Committees.

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| 2018 | Training topics | Venue | CoE | Dates | Partners | Number of participants |
| 1 | Monitoring RF spectrum in modern wireless era | China | SRMC | 16-20 April |  | 42 |
| 2 | Mobile Broadband QoS | Ghaziabad | ALTTC | 1-5 May | TRAI | 26 |
| 3 | Internet and IPv6 Infrastructure Security | Bangkok | MDE | 14-18 May | APNIC | 34 |
| 4 | Cybersecurity | Tehran | ALTTC | 12-16 May | Faculty of ICT, Iran | 51 |
| 5 | IoT Technologies and Applications for Smart Cities | Ghaziabad | ALTTC | 29 Oct-2 Nov | Faculty of ICT | 46 |
| 6 | Conformity & Interoperability and 5G Planning | China | CAICT | 10-14 September |  | 50 |
| 7 | Blockchain Ecosystem and Decentralization | Bangkok | MDE | 3-6 Sep | NBTC | 62 |
| 8 | Competition analysis market analysis and competition regulation | Bangkok | MDE | 17-20 Sep | NBTC | 55 |
| 9 | Advanced wireless and traffic engineering for the Pacific | Fiji | MDE | 17-19 Oct | PITA | 37 |
| 10 | IoT Overview and Applications | ITU Academy online | CAICT | 23 April-20 May |  | 156 |
|  | TOTAL number of participants |  |  |  |  | 559 |

## Training opportunities implemented (2018-2020)

## 2018

## 2019

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| --- | --- | --- | --- | --- | --- |
|  | Name of training | Type | Date | Number of participants | Partners |
| 1 | Information Security Internal Audit | face-to-face | 27-31MAY19 | 60 |  |
| 2 | Evolution and emerging trend of broadband access technologies | face-to-face | 20-24MAY19 | 19 |  |
| 3 | Broadband Network Security: Challenges & Solutions | face-to-face | 26-30AUG19 | 10 |  |
| 4 | IoT Applications and IoT Security Aspects | face-to-face | 9-13DEC19 | 30 |  |
| 5 | Cybersecurity for Enterprises | face-to-face | 10-15OCT19 | 18 |  |
| 6 | Next Generation Broadband Network: Design, implementation, and applications | Online | 25NOV-20DEC19 | 5 |  |
| 7 | Cyber Network Defense & Cyber Laws | face-to-face | 16-20Dec19 | 11 |  |
| 8 | IoT: Technological Aspects and Implementation | Online | 16-27Dec19 | 1 |  |
| 9 | Conformity & Interoperability (C&I) in 5G | Online | 15APR-11MAY19 | 91 |  |
| 10 | 5G and ICT Applications | Online | 17JUN-10JUL19 | 47 |  |
| 11 | Conformity and Interoperability relating to Smart City | face-to-face | 18-21SEP19 | 30 |  |
| 12 | ICT Application relating to Smart City | face-to-face | 21-24SEP19 | 34 |  |
| 13 | IOT Security Challenges and Solutions | Online | 26AUG-06SEP19 | 59 |  |
| 14 | Building IOT Solutions for Energy and Water Resource Management | Online | 16-27DEC19 | 42 |  |
| 15 | Smart Sustainable City driven by Data, Network and AI Technologies | face-to-face | 15-18JUL19 | 24 |  |
| 16 | Artificial Intelligence Overview and Applications | face-to-face | 16-19SEP19 | 47 | NBTC |
| 17 | Digital Transformation and Digital Government | Online | 4-29NOV19 | 122 |  |
| 18 | Spectrum Management and IMT 2020 Radio Technology Application | face-to-face | 17-21JUNE2019 | 35 |  |
| 19 | Spectrum Engineering and IMT2020 | Online | 1-19JUL19 | 88 |  |
| 20 | Fifth Generation (5G) Technology: State-of-the-Art, Opportunities and Challenges | face-to-face | 15-17OCT19 | 28 |  |
| 21 | Human exposure to Radio Frequency Electromagnetic Fields | face-to-face | 3-5DEC19 | 13 |  |
| 22 | Traffic engineering and advanced wireless network planning | face-to-face | 30SEP-3OCT19 | 53 | NBTC |
|  | TOTAL number of participants |  |  | 866 |  |

## 2020

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| --- | --- | --- | --- | --- | --- |
|  | Online Trainings | CoE | Dates | Number of Registration | Partners |
| 1 | Conformity and interoperability relating to Smart City | CAICT | 6-24 April | 67 |  |
| 2 | Digital Transformation: Enhancing IoT-Driven Accessibility | IOT ACADEMY | 11-17 May | 139 |  |
| 3 | Security Protection and Evaluation for Future Network | CAICT | 25 May - 5 June | 114 | ZTE |
| 4 | IoT Sensors and Network for Disaster Communication | ALTTC | 20-31 July | 141 |  |
| 5 | ICT applications relating to smart cities and communities | CAICT | 17-30 August | 73 |  |
| 6 | Spectrum Monitoring Technologies and Practice | SRMC | 17-28 August | 207 |  |
| 7 | Advanced Broadband Network QoS and Applications | ALTTC | 24 August- 4 September | 69 |  |
| 8 | IoT Advanced Applications: Smart City & Industry 4.0 | ALTTC | 14-25 September | 40 |  |
| 9 | Fifth Generation (5G) Radio Access Network Planning and Coexistence | UTM | 14-28-September | 19 |  |
| 10 | Building IoT Solutions for Smart Sustainable Cities | IOT ACADEMY | 28 September-9 October | 33 |  |
| 11 | Data Protection Framework with Security Policy & Audit | ALTTC | 5-16 October | 94 |  |
| 12 | Digital infrastructure planning | ALTTC | 12-23 October | 15 |  |
| 13 | 5G Technology and Applications in practice | CAICT | 12-31 October | 95 | Univ. Syd, ITRC, Huawei, Westwell |
| 14 | Developing Internet of Things Ecosystem | IOT ACADEMY | 2 - 13 November | 30 |  |
| 15 | Government Innovation based on Emerging Technology | NIA | 4-29 November | 132 |  |
| 16 | Cyber Security and Critical Infrastructure Protection | ALTTC | 23 Nov – 5 Dec | 90 |  |
| 17 | Human Exposure to Radio Frequency Electromagnetic Fields | UTM | 23 Nov – 6 December | 16 |  |
| 18 | Digital Government & Smart City for Resilience | NIA | 30 Nov – 18 December | 233 |  |
|  | TOTAL number of participants |  |  | 1607 |  |

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1. [(RDF-ASP) 2020](https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2020/RDF/default.aspx) was organized virtually from 2-5 November 2020 [↑](#footnote-ref-2)